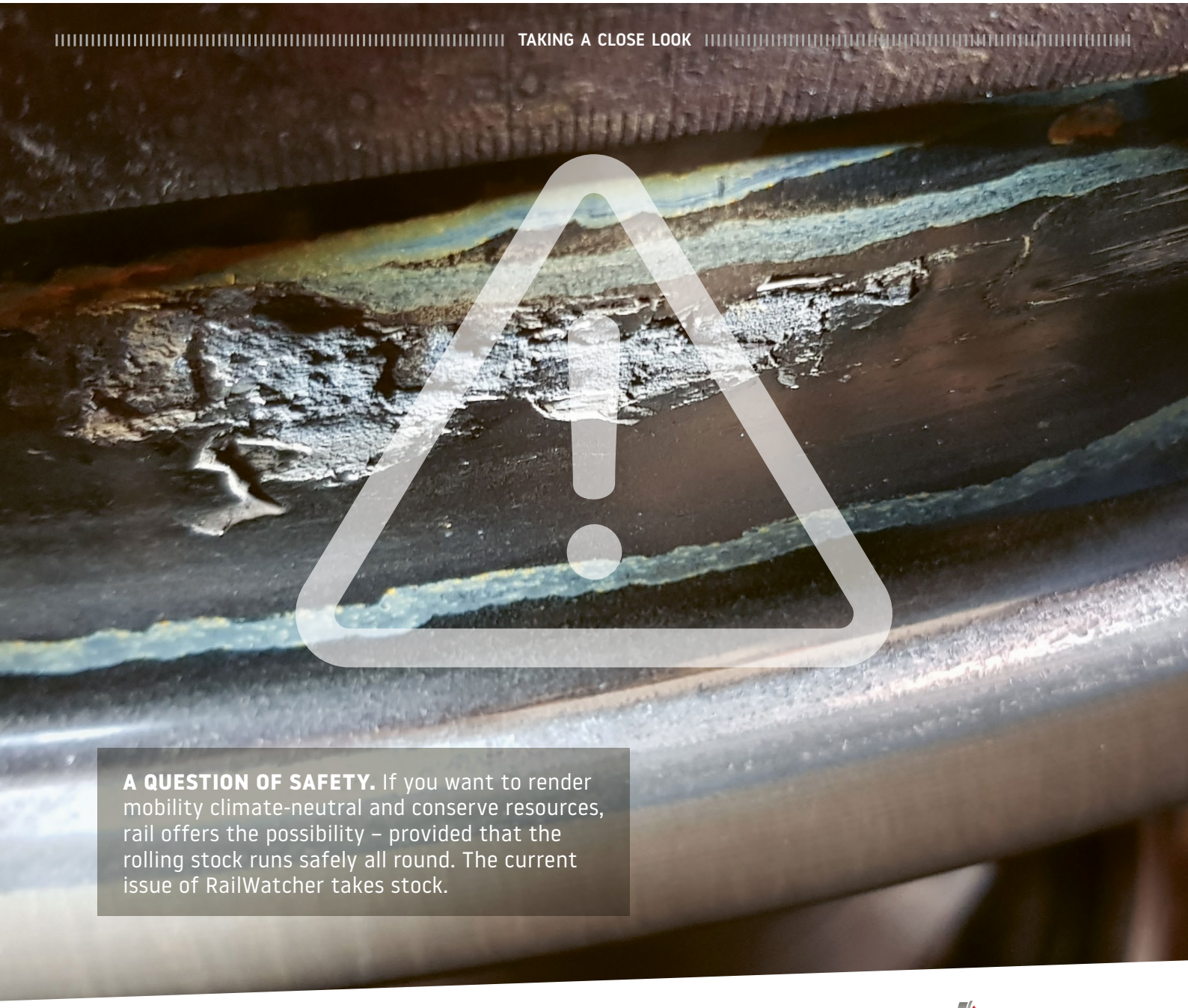
RAILWATCHER

EDITION 02

NEWSLETTER BY RAILWATCH DIGITAL MONITORING OF FREIGHT WAGONS

TAKING A CLOSE LOOK



A QUESTION OF SAFETY. If you want to render mobility climate-neutral and conserve resources, rail offers the possibility – provided that the rolling stock runs safely all round. The current issue of RailWatcher takes stock.

RAILWATCH
Railway Monitoring System

DEAR READERS,

No question: rail is by far the safest mode of transport. Studies show that up to 42 times more accidents involving hazardous goods occur on the road. Thus, it comes as no surprise that most hazardous goods transports are carried by freight train. So much for the good news. What is not such good news is that even ten years after Viareggio and following several further accidents with jammed brakes and broken axles, far too many defective wagons are still to be found travelling on German and European routes. With the images from our monitoring systems, we hold proof of this in our hands every day.
If the accelerated shift of freight traffic from road to rail, announced by Federal Transport Minister Andreas Scheuer, is to be more than mere lip service, then we have to take countermeasures swiftly. With our services, we can support you in a targeted manner. Because one thing is certain: only with an even greater degree of safety will we really be able to set the course for a bright future of the railway.

I wish you an inspiring read.

Your Michael Breuer
Managing Partner of RailWatch

"Safety is a decisive success factor for the modal shift."

HIGHLY INFLAMMABLE

"The massive increase in the number of **trackside fires** shows the challenges that arise from the conditions of **climate change** for complex infrastructures such as the rail network."

Matthias Gastel, Member of the Committee for Transport and Digital Infrastructure in the German Bundestag and Railway Policy Spokesman Group of Bündnis 90/Die Grünen

468

Trackside fires by July 2018 alone

O'ZAPFT IS

Just in time for the start of this year's Oktoberfest, the major ICE artery between Berlin and Munich was closed down following a trackside fire. This fire was triggered by the brakes of a freight train getting stuck.

ATTENTION! TRAIN APPROACHING

Trackside fires, derailed trains, noise pollution: these are often due to defective brakes on freight wagons. The RailWatch systems register the condition of wheel profiles and brake blocks in real time – here is just a glimpse.

BREMERHAVEN

20%

of all wagons of the categories LGS/LGNS enter Bremerhaven with a hollow tread > 2 mm.

MORE THAN

4%

of all wagons arrive in Bremerhaven with a hollow tread > 2 mm.

120

RAIL SAFETY REPORTS

were dispatched between February and May 2019. These relate to safety-relevant damage codes that require the vehicle to be taken out of operation, including hollow tread of more than 2 mm and sharp flanges. What is remarkable: that the damage was either not detected or simply not repaired. This is demonstrated by the fact that the wagon in question is measured time and again with the same and even worsening damage.

PERSISTENT OFFENDER

20 times

within 4 weeks the same damage was measured on the same freight wagon without repair, according to the RailWatch scans.

THE FRONT-RUNNER

3.7 mm

hollow tread was measured on one freight wagon in 5 consecutive RailWatch scans.

A QUESTION OF RESPONSIBILITY

Klaus-Peter Langenkamp advises that wagon keepers and railway undertakings (RUs) should use state-of-the-art technology to improve the operational safety of their rolling stock. The specialist lawyer for transport and forwarding law believes that the judiciary and the insurance industry will in future also rely on digitally collected data when assessing damage situations in the rail industry, just as they do in road transport.

Mr Langenkamp, ten years after the tragic train accident at Viareggio, an Italian court of appeal in June 2019 confirmed the prison sentences for several railway managers, including Germans. Do accidents like this raise questions about rail freight safety and the responsibility of the companies involved? How do you see this?

Langenkamp: The responsibility has always been with those who cause the damage. But the Viareggio case has once again made it very clear that those who neglect the issue of safety will also be held personally accountable. Any manager who does not ensure that the applicable safety regulations are complied with may ultimately face criminal charges in the worst case. And even if German criminal law does not provide for a comparable level of punishment, Viarregio shows clearly: safety is a matter for the boss, whereby safety issues may of course be delegated within the company.

> "Whoever fails to remedy defects despite knowledge thereof tacitly accepts the risk of an accident."

However, the representatives must be professionally qualified and properly selected – and they should be monitored appropriately. Because these requirements apply uniformly throughout Europe, companies that adhere to them have nothing to fear. They can sleep soundly, even if they send their wagons all over Europe.

PERSONAL DETAILS

Klaus-Peter Langenkamp is a specialist lawyer for transport and forwarding law as well as a specialist lawyer for international commercial law. As a senior partner in the Düsseldorf law firm TIGGES Rechtsanwälte, he advises German and foreign companies in the areas of trade, distribution, real estate, logistics, transport and customs. A particular focus of his work lies in the railway sector. Klaus-Peter Langenkamp is a member of the Foreign Trade Association of North Rhine-Westphalia, the German Association for Transport Law and the Promotional Association of the Research Centre for German and International Railway Law.

As highly as the importance of safety is regarded in companies today, many wagons with safety-relevant wear conditions and significant damage can still be found on the rails. In the event of an accident, is gross negligence deemed to apply?

Langenkamp: If defects are known and have not been remedied, I would definitely say yes. Because then the risk of an accident and possible danger to people is accepted tacitly. If defects remain undetected, the question arises whether they could not have been discovered earlier, for example with the help of appropriate technology. In the event of an accident, management could be accused of recklessness in both cases.

The transparency brought about by digitisation is not regarded as unreservedly positive by everyone involved in rail freight transport. Many wonder whether the concrete knowledge of a damage is more likely to give rise to a possible liability than would be the case without this kind of knowledge. Is this really the case?

Langenkamp: No, I don't think so. One is liable also without this knowledge, for example, if a damage could have been prevented. In my opinion, such a discussion should not be necessary if everyone gives the issue of railway safety the priority required by the legislator and is open to technical solutions.

In your assessment as a lawyer: another fear in the market is that courts will use Wayside Monitoring data as evidence in the foreseeable future. Is this concern justified? Or, on the contrary, isn't such clear evidence even desirable?

Langenkamp: Such evidence is clearly to be welcomed from my point of view. Let us return once again to the state of the art, which is not to be regarded statically, but rather dynamically. When scrutinising an accident, the investigating authorities and the judiciary should certainly be interested in all the facts and data that may help to clarify the situation. And they will also ask whether the state of the art would have made it possible to better assess the risk, minimise it in advance and thus possibly prevent an accident. The wagon keeper or the RU will then have to justify whether and on what grounds a particular technical solution was not adopted.

This concerns the criminal law dimension in particular, but what about civil law?

Langenkamp: In civil law, the commercial duty of care applies. In order to fulfil this obligation, new technical solutions will have to be taken into consideration. This is also the view of insurance companies. There are already various areas of material damage in which damage calculations are prepared digitally by service providers and accepted by insurers. Not least because of existing digital solutions, the insurance industry has changed the processing of motor vehicle material damage considerably in recent years. Even courts often no longer see the need to obtain additional expert opinions if the materials and images provided are valid. And think of the implementation of the GCU: Particularly in the case of transfers of liability from one RU to the next, digitised images will have an enormous commercial effect in the future. After all, they make it possible to allocate damage clearly to the party who caused it.

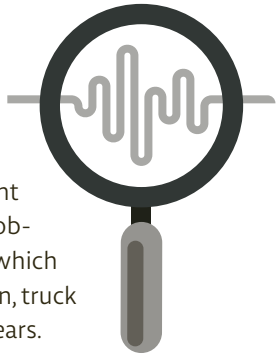
Dear Mr Langenkamp: Thank you very much for the interview.

SAFETY REPORTS DEMONSTRATE THE NEED FOR ACTION

Mounted alongside the track, the sensors of the RailWatch monitoring system record a great number of parameters on freight wagons and locomotives – fully automatically. To ensure consistently high data quality, the plausibility of the measurement results is checked regularly by random sampling. In the course of these random checks, the "repeat offender problem" was noticed: this refers to critical GCU conditions that were detected in several consecutive measurements on the same wagon and that were obviously not identified during any technical wagon inspection. The urgent need for action and information associated with this also remained undetected.

With the Rail Safety Report, RailWatch is now making its contribution towards greater safety on the railways – and free of charge at that. If critical GCU conditions are detected during the system checks, they are compiled in a report and proactively sent by e-mail to the respective railway companies. Thus, the RU can take countermeasures swiftly.

STUDY RECOMMENDS MONITORING SYSTEMS



The rail sector can double its transport performance by 2035 and achieve a market share of 35 percent in freight transport. This is the conclusion reached by the study "Shifting freight traffic from the operator's point of view" by the Network of European Railways (NEE). One of the key growth drivers is rolling stock. But are there a sufficient number of vehicles for a significantly higher volume of traffic? The study says no.

"Until the middle of this decade, the freight wagons were the most frequently neglected resource in rail freight transport," says the study. The main problem is the long service life of a wagon, which reaches 30 to 40 years – by comparison, truck semi-trailers only run for around ten years.

Unlike trucks, wagons are still largely opaque as regards data, with no measurements from ongoing operations. Revision cycles are based on historical experience, which does not, however, take the actual technical condition into account. According to the study, the immediate fleet-wide installation of a power supply for on-board condition monitoring is difficult to implement due to the long lifecycle of the wagons. The authors therefore recommend the use of monitoring systems alongside the track. "An all-encompassing installation in Europe enables … the generation of actual data on the wear and tear of sensitive components. Condition-based maintenance, predictive maintenance and sensor-supported analyses thus become reality".

CONSTITUTIONAL STATUS

Shifting freight traffic from road to rail is a central transport policy objective for Switzerland as a transit country, for which there is a separate constitutional article. The so-called Alpine Protection Article (Art. 84) was included in the Federal Constitution with the adoption of the Alpine Initiative in 1994.

LIST OF DEFECTS

"Due to damage in the right axle bearing, the components were subjected to extremely high thermal stress within a short period of time. This led to the breakage of the right shaft journal. As a result, the railway vehicle's ability to stay on track was no longer guaranteed, which inevitably led to derailment." The official investigation reports of the German Federal Agency for Railway Accident Investigation (BEU) regularly include analyses such as these.

As a reaction to an increase in accidents due to blocked wheelsets, wheel flats and broken axles, the German Federal Railway Authority (EBA) already issued a "General Directive for the maintenance of wheelsets on freight wagons" in 2007. This obliged railway undertakings and keepers of railway vehicles to maintain the axles in their standard-compliant nominal condition by means of regular maintenance and testing procedures. Since "further accidents with serious consequences in part as a result of axle breakage" also occurred thereafter, the EBA tightened the directive once more in 2009. Since then, there has also been a general obligation to document the history and maintenance of freight wagon wheelsets. These strict requirements are meanwhile also part of the European maintenance standard EN 15313.

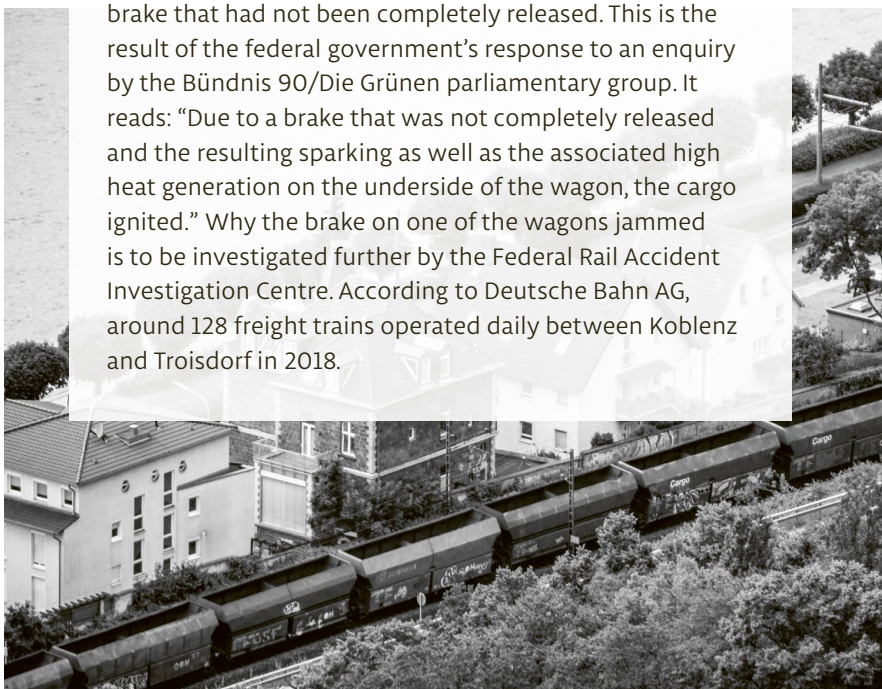
SAFETY LEVEL: UNSATISFACTORY

Almost 7,000 freight wagons were inspected by the Swiss Federal Office of Transport (BAV) last year. Using so-called risk-based random checks, the specialists determined whether the vehicles were in technically ideal condition. The checks showed that "the quality of the freight trains remains at an overall unsatisfactory level". According to the BAV, a considerable proportion of the quality requirements that the industry had set for itself with the "General Contract for the Use of Freight Wagons" (GCU) were not met.

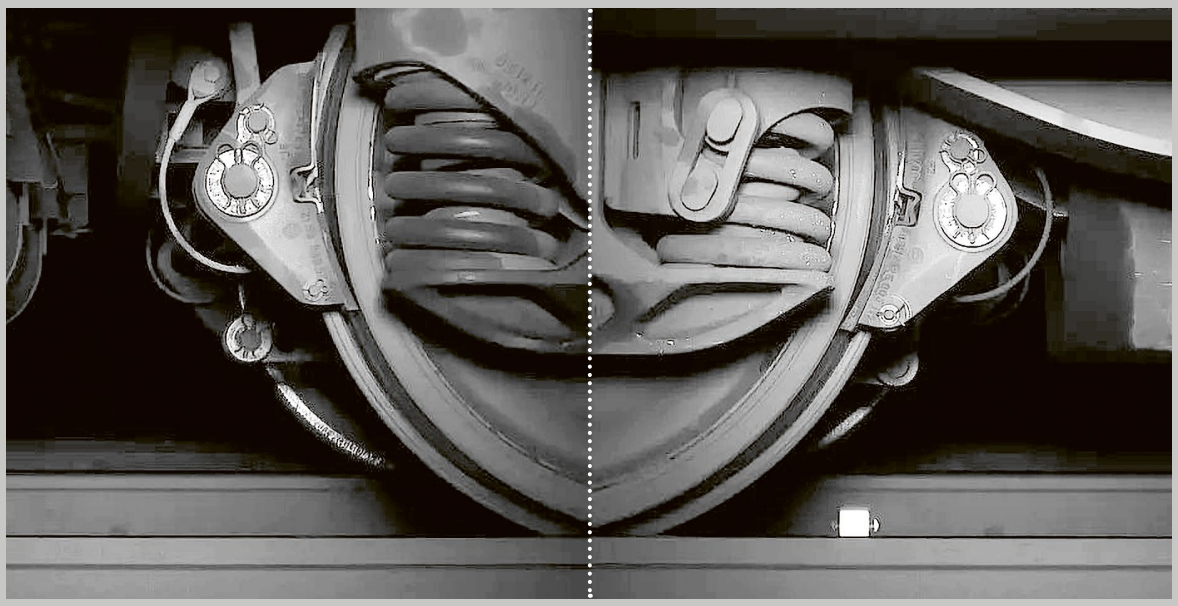
Among other things, defective brake blocks and damage to wheels were discovered. Should intolerable safety deficits be established, the BAV demands that the damage be dealt with directly on site. In serious cases, the safety authority may order immediate cessation of operation and prohibit the use of a vehicle.

BLOCKED BRAKE – BURNING WAGONS

The flames shot several metres high into the night sky and thousands of exploding spray cans were hurled through the air. In the night from 6 to 7 February 2019, the 5,000-inhabitant community of Unkel on the Middle Rhine experienced a veritable inferno when three freight wagons loaded with cosmetics caught fire at the station. The fire brigade arrived with a large contingent, and around 60 residents had to leave their homes as a precaution. The railway line on the right bank of the River Rhine was closed for days afterwards. According to current knowledge, the cause of the fire was a freight wagon brake that had not been completely released. This is the result of the federal government's response to an enquiry by the Bündnis 90/Die Grünen parliamentary group. It reads: "Due to a brake that was not completely released and the resulting sparking as well as the associated high heat generation on the underside of the wagon, the cargo ignited." Why the brake on one of the wagons jammed is to be investigated further by the Federal Rail Accident Investigation Centre. According to Deutsche Bahn AG, around 128 freight trains operated daily between Koblenz and Troisdorf in 2018.



FIND THE **MISTAKE!**



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