

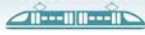
Safety in Norwegian Aviation and Norwegian Rail - what can the road sector learn?

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In this study, we have investigated what makes aviation and the railway sector in Norway extremely safe. We find that both sectors have upgraded their infrastructure thoroughly in recent decades, that both have an extensive control and documentation regime, and that the sectors have well-developed safety cultures. The road sector can learn from the other sectors by introducing requirements for safety management systems through tenders, following up notifications from the public to the road traffic centres more systematically, and inspect roads and road equipment more often.

In the National Transport Plan (2022–2033 and 2025–2036), there is an overarching goal of an efficient, environmentally friendly and safe transport system in 2050. In the transport sector, there is a vision of zero fatalities and serious injuries in 2050 (Ministry of Transport, 2021 and 2024). In the National Transport Plan (NTP), extensive investments in the transport sector are promised, and the railways are to receive a major boost. The various parts of the transport sector have different challenges and must accommodate common European regulations to varying degrees. However, they have in common that they all experience demands for increased cost efficiency and higher environmental standards, while safety must be (even) better. Norway ranks very high when it comes to road safety in Europe, measured in the number of deaths per million inhabitants in the road sector. Safety in shipping is good, and Norway is at the top in Europe when it comes to safety in aviation and in the railway sector. The road sector in Norway still has opportunities to further improve safety and can perhaps learn from the aviation and railway sectors. This study has therefore asked the following four main questions:

1. What explains the high level of safety in Norwegian aviation and in the Norwegian railway sector?
2. What safety challenges do Norwegian aviation and the Norwegian railway sector possibly experience today?
3. If the railway sector and aviation experience pressure on the safety margins, what type of pressure would this possibly be?



4. What can the road sector possibly learn from the aviation and railway sectors in Norway?

These questions have been answered by means of focus group interviews, in-depth interviews and e-mail interviews with key informants in the aviation and railway sectors, document analysis, as well as comparative analysis of the three sectors.

The parts of the aviation and railway sector studied here have a very high level of safety and have not had any fatal accidents in the last decade. This study finds that the high level of safety in the two sectors we find here is explained by these factors:

- that the infrastructure has been thoroughly upgraded in recent decades,
- that both feature a large control and documentation regime, and
- that the sectors are dominated by professional actors (large organizations whose primary business is transport), and
- that the sectors have comprehensive and well-developed safety cultures.

Our informants from the two sectors expressed that in general they did not experience pressure on safety margins, but that, on the contrary, the standards are constantly being tightened and that the infrastructure is now generally better than ever before. One of the factors contributing to the increasingly high level of safety in the sectors is that the common European regulations for the aviation and railway sectors are becoming stricter. Safety in both sectors is also strengthened by the fact that the technology in the trains and planes is better than ever before. Of course, other factors can also come into play here.

However, the sectors still experience various challenges that create pressure on safety. In aviation, the airlines are experiencing GPS jamming in the north, that drones are being flown around airports, and not least that the employees are struggling with the fact that the working and rest time regulations allow for very long working days and weeks. In the railway sector, continuing safety challenges are that there are many unprotected level crossings, that the sector is struggling with a maintenance backlog, that certain natural hazards persist, and that climate change and extreme weather are becoming more difficult to deal with. In the railway sector, unauthorized persons on the track are also a constant challenge.

We find that the road sector can learn the following from the other sectors:

The road authorities can, both under their own auspices and when purchasing services from others, demand that companies have fleet management systems and work to develop a better safety culture. For (larger) transport companies, it is possible to demand that these have introduced ISO 39001 as a safety management system. By requiring this in public procurement, the road authorities can stimulate the development of a safety culture and safety management in transport companies.

The road sector does not have a system for mandatory incident reporting like aviation and railways do. It is not possible to establish such a system, given that most operators in road traffic are private drivers. However, it has been documented (Riksrevisjonen, 2023)¹ that road traffic centers often receive notifications from road users about unfortunate conditions on roads. Such notifications could be, for example, that the road is slippery, that road lighting is not working, that signs are illegible or that there is damage to the road surface. If a system is established for more systematic follow-up of inquiries from the public, it could lead to

¹ Office of the Auditor General of Norway.



reported errors being corrected more quickly. In addition, road users can be encouraged to speak up about conditions they believe should be changed to an even greater extent.

A third lesson the road sector can learn from the other sectors is to intensify the level of control. More frequent and more systematic checks of roads and road equipment can lead to errors and deficiencies that have an impact on traffic safety being rectified more quickly than today. However, this also requires sufficient capacity for maintenance and sufficient funding for this maintenance. Currently, county roads in particular, have a large maintenance backlog. Many stakeholders want to ameliorate this situation.