

Summary:

Between Control and Collaboration: Transport safety inspectorates in Norway

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Over the last couple of decades, the organisation of supervision and management models for safety work across the Norwegian transport sectors have become more homogeneous, partly as a response to changes in the transport markets, and partly as a reflection of shifting trends in public management and the need for public control of deregulated and diversified operating units. After the establishment of the Norwegian Road Supervisory Authority in 2012, all transport branches have some form of inspectorate. There are very marked differences between the Norwegian transport safety inspectorates, both in terms of size, organisation and tasks. This report reviews and compares operators' experiences with the transport inspectorates, and discusses issues such as agencification, accountability and safety culture in relation to inspectorates.

How do Norwegian transport inspectorates influence safety work?

Over the last couple of decades, the organisation of supervision and management models for safety work across the Norwegian transport sectors have become more homogeneous, partly as a response to changes in the transport markets, and partly as a reflection of shifting trends in public management and the need for public control of deregulated and diversified operating units. At the same time, the degree of coordination and integration across the transport sectors has increased, especially through the introduction of joint National Transport Plans and the expansion of the Norwegian Accident Investigation Board to cover all transport sectors.

After the establishment of the Norwegian Road Supervisory Authority in 2012, all transport branches now have some form of safety inspectorate. However, there is still an ongoing discussion with respect to models of inspection: Does the existence of a safety inspectorate influence the priority given to safety by governmental agencies? Will the responsibility system designers have for safety be more clearly defined and more effectively enforced if there is a safety inspectorate than if there is no such inspectorate? And in what ways do inspectorates frame and influence safety work? What barriers do limit their work and what improvements can be made of mandates, organisation and instruments?

The aim of the report is to enlighten how the existing Norwegian transport inspectorates influence safety work in their respective sectors, in what ways they are perceived as being productive or counterproductive, and to find whether the actors see a potential for increased cross-sectorial collaboration or synergy.

This report is based on interviews with representatives from the four safety inspectorates, and with a number of representatives from operator organisations (including infrastructure providers) in the different sectors in Norway, in all 26 interviews. However, in most of the sectors, only a subset of operators have been

interviewed, so the report cannot claim to be exhaustive. In addition, two representatives from the Swedish and Finnish transport inspectorates have been interviewed.

Most of the interviews were face-to-face, but in cases where this was not practically feasible, telephone interviews were conducted. In the case of the Civil Aviation Authority (on their request), the interview guide was used as the basis for an email interview, which does not reflect the opinions of any one individual, but of the organisation as a whole.

After each interview, a written version was distributed to the interviewee(s), for corrections or amendments. Excerpts from the interviews have been translated into English by the author. A draft report was distributed to all interviewees for comments and corrections.

In addition, the report is based on government documents (White papers, reports to the parliament, Norwegian Official Reports) pertaining to inspectorates in general and transport inspectorates specifically, as well as on National Transport Plans, and on annual reports and allotment letters for the individual inspectorates.

Marked differences between Norwegian inspectorates

There are very marked differences between the Norwegian transport safety inspectorates, both in terms of size, organisation, tasks and instruments, see table S1.

Table S1: Inspectorates' main tasks, subjects and instruments.

Sector	Risk level	No of employees	Main subjects	Main tasks	Instruments/
Aviation	Low	180	Airlines, helicopter companies, infrastructure, aircraft, instructors, schools	Developing regulations, inspection, certification, information, international work	Suspension, revoke licences or certificates
Railway	Low	65	Rail companies, metro and tram operators, infrastructure providers, fairgrounds	Developing regulations, inspection, certification, market surveillance, information, international work	Fines, revoke licences or certificates, shut-down of operations
Maritime	Low	330	Shipping companies, ferry providers, offshore firms, individual fishing boats, ports, recreational boating	Developing regulations, certification, inspections, international work, etc	Revoke certificates or licences, fines
Road	High	9	National public roads administration	Proposing regulations, inspections/supervisions, information, international work	None

The Maritime Authority is not uniquely geared towards safety, but manages a number of tasks relative to the maritime sector. Unlike the other sectors, this inspectorate is characterised by having outsourced much of the practical inspection work. It also works with (some) units that can choose to opt out of its jurisdiction, and the inspections are therefore to some degree subject to competition. The regulations

which the Authority enforces, are predominantly grounded in international agreements.

The tasks of the Civil Aviation Authority are similarly mostly defined by international standards and agreements. However, they carry out their own inspections, and their responsibility is confined to safety in the sector.

The Railway Safety Inspectorate has a slightly broader mandate, which also includes market surveillance. While its regulations were previously predominantly domestic, it is now increasingly implementing international legislation. Its number of potential subjects, which was previously quite limited, has increased with the insertion of cableways, fairgrounds and amusement parks in their portfolio.

The Road Supervisory Authority differs from the other inspectorates in many ways. For one thing, it is very small compared to the others, with only nine employees. Another marked difference is that it reports to the Director of National Public Roads Administration (NPRA), who is also the head of their only subject of inspection. Unlike what is the case in air and rail, it does not have an advisory role vis à vis the Ministry of Transport and Communications. All the other inspectorates manage critical functions in the system of their respective sectors; such as access control through licencing and certificates, and follow-up of the Accident Investigation Board's reports and recommendations.

In the road sector, however, no such tasks have been attributed to the Authority, and the Authority does not have access to any forms of sanctions if their recommendations and suggestions are not taken into account by the NPRA. This means that the Authority has been given a very wide licence to define their own mandate, but also that its degree of "automatic" integration with its sector is more limited, and there is a risk that they will not be conceived as being essential to the operation of a safe road system.

The inspectorates do, to differing degrees, operate within an international framework, which more or less determines their work. In aviation and the maritime sector, regulations are predominantly international, and this is increasingly also the case in the railway sector. In the road sector, however, internationalisation is very limited. International regulations govern aviation more than any of the other sectors, and are usually considered a boon here, although challenges persist in relation to specific Norwegian conditions. The conflict between the local context and the global requirements could also to some degree be found in other sectors.

The inspectorates make use of system-based perspectives

The establishment of the Norwegian transport inspectorates can be seen as an instance of agencification; a development that separates regulatory activities from operational ones, purchasers from providers, and policy-making role from operational role. The agency model is frequently claimed to be more flexible and efficient than alternative forms of organisation, and may also enhance credibility and predictability. However, as it increases the extent of formalisation, it can also lead to more bureaucracy, a fact mentioned by many of the operators interviewed.

Another discussed aspect of the agency model is if it lessens the political control of an area or if it makes the organisations more transparent and the division of roles and responsibility clearer. Generally, all the interviewees held that responsibility was very clearly defined in their respective sectors. In the railway sector, there had been

some initial confusion over the responsibility of the inspectorate after inspections, but this was now considered to be resolved. In the maritime sector, the introduction of the new Maritime Safety Act had clarified responsibilities, by making shipowners more accountable. In aviation, international arrangements are perceived to clearly define responsibilities, within and between organisations. In the road sector, one of the stated reasons for establishing an inspectorate, was that this would clarify roles and responsibilities. Although roles and responsibilities are considered clear in the current organisation, the relations are also negotiable, and the focus on safety is subject to limitations set by other social goals, budgets and habits. At the same time, agencification is associated with a lessening of political control of an arena.

Regulatory regimes can be divided into prescriptive regulation, system-based regulation, and performance-based regulation. The Norwegian transport inspectorates all subscribe to the system-based approach, which focuses on process and systems, but most of them also include elements from the other regimes, and do not purely belong to one of the ideal types. The system-based approach to safety links in with a changed conception of accountability, where the accountable entity is typically the organisation, rather than the individual.

Development from control to cooperation

Overall, the operators' experiences with inspections were positive, and cooperation was perceived to have improved over time, possibly as a result of improved understanding of the system-based approach. Operators also tended to point to increased professionalization on the part of the inspectorates, which have made their actions and recommendations more predictable.

The development may also partly be explained by an increased client-focus in the inspectorates, an approach that has been shown to instil a greater desire to comply than the previous, more controlling attitude. The distance between inspectorates and operators was also generally seen to have decreased, to the benefit of smoother interaction and communication. Complaints often referred to lack of understanding of the operators' work, the specific environment in which they function, and their framework conditions. It was mentioned, however, that external factors, such as attention from the media or politicians, rather than a concern for safety, could influence the inspectorates' priorities, and lead to inefficient use of resources. The inspectorates influence the *kinds* of safety work going on in operator organisations, and how they approach the question of safety in general, and their priorities sometimes differ from the ones that the operators would have chosen if left to their own devices.

The concept "safety culture" was used actively in all of the organisations. The inspectorates tended to consider influencing safety culture as under their remit. How they imagined this to be taking place, however, differed, from providing a focus on safety culture, to adapting regulations in such a way as to facilitate compliance, to influencing behaviours, which in its turn might change culture, to providing an integrated picture of the causal processes leading to accidents. In the operator organisations, it was usually assumed that safety culture was an in-house responsibility, and that culture, as something going beyond mere rules, needed to have a local anchoring. It was pointed out that a reference to safety culture could sometimes veil real conflicting interests, and that the accompanying accountability structure – where the organisation, rather than the individual is assigned blame – could also undermine safety work.

Limited influence on framework conditions

While the safety inspectorates are to secure an acceptable level of risk in transport, this level is mostly not defined by the inspectorate, but is the outcome of a social and political process, where several considerations and goals must be weighed against each other. Lack of available resources was cited as a main barrier to safety improvement in all sectors, but in many cases, the resources needed were beyond what society is prepared to pay. The inspectorates' influence on these prioritisations was generally deemed to be rather limited.

Important parts of the transport sector have been restructured so as to facilitate competition and financial transparency. In the railway sector, several interviewees held that the present organisation profits these goals rather than safety, and that a different structure would be optimal from the point of view of safety. Several interviewees also drew attention to the lack of an arbiter in cases of disagreement between the actors. In aviation, however, the flag-carrier company found that regulations were adapted to the past organisation of the sector. Although there is no conclusive evidence that deregulation and increased competition has endangered safety, this was a central concern in the aviation and railway sectors. Since both sectors have very good safety records, there is a certain push for decreasing redundancy. The lack of accidents is paradoxically sometimes experienced as a challenge for those working with safety in the organisations. In the maritime sector, the public actors agreed that the interests of business and safety coincided for the international fleet, as both perspectives lead to a drive for stricter international regulations. For smaller Norwegian vessels, however, the interest organisations perceived a conflict between finances and safety for the individual shipowners, and thus called for a more integrated understanding of safety and financial frameworks.

In the railway sector, the Railway Administration was considered an impediment to safety work by many of the operators, who found the organisation opaque, bureaucratic and reactive. In addition, the fragmented organisational structure was seen as less than optimal from the perspective of safety. In aviation, the sector's own safety record was seen as a challenge for those working with safety, and the deregulation and low-cost carriers were considered a potential threat in the future. In the maritime sector, the Authority struggled to document that measures were financially sound, and envisaged that lack of qualified personnel could become a challenge. Among operators, it was mentioned that there is no possibility for anonymous incident reporting. In the road sector, many effective measures cannot be introduced because they are considered threats to individual autonomy and privacy.

Limited support for merging inspectorates

In Sweden and Finland, organisations have been merged to create joint transport inspectorates. While this solution has previously been discussed and rejected in Norway, many expect this debate to re-emerge. Among inspectorates, the attitude to such a potential merger was uniformly negative, as they saw limited potential for improvement due to the differences between sectors, and considerable possible disadvantages related to such issues as loss of expertise. We should note, however, that according to the interviewees from the Swedish Transport Agency and the Finnish TraFi, this has not happened in Sweden and Finland, and, on the contrary, generic expertise is seen to have improved as a result of cross-sectorial learning. Several interviewees from the operator side were also negative, partly in response to

experience with or anecdotal evidence relating to the other Nordic countries. This negative impression might have to do with teething problems in the new organisations, however.

When it came to potentials for improvement for the inspectorates, the operators in the maritime and railway sectors were somewhat concerned about the sector-specific expertise in the inspectorates. The relocation process had, at least initially, created challenges for the maritime sector, as it is now located in a maritime cluster, where competition for competence is fierce.

A more troubling and general issue brought up by several interviewees, was the danger that relating to an inspectorate's expectations may lead to a focus on following rules and looking at details, rather than on an integrated perspective, and a more holistic approach to the safety of the sectors.

Shaping the form of safety work

The fundamental question of whether transport safety inspectorates are instrumental to improving transport safety is notoriously difficult to answer. However, looking at the accident trends for the periods that the inspectorates have been in existence, can at least provide some indications. We have compared accident numbers for rail and aviation in Norway before and after the establishment of inspectorates, and examined long-term trends in accident rates for aviation and rail transport.

Following the creation of a safety inspectorate for aviation in 2000, there have been no passenger fatalities in civil aviation in Norway. The number of accidents (all non-fatal) has varied between 0 and 5 per year, which is higher than predicted according to the long-term trend before the safety inspectorate was established.

The number of fatalities in rail traffic has been about 30% lower than predicted on the basis of prior trends. While no trend is discernible in aviation (where the number of accidents is extremely limited), the number of railway accidents has been about 40% lower than predicted from trends before the National Railway Authority was established.

We should note, however, that in both sectors, the number of accidents was already extremely low, and that accident numbers may be influenced by external factors, such as the deregulation of the aviation industry, or the response to the major railway accident in Åsta in 2000. We may therefore conclude that while transport inspectorates contribute to shaping the form of safety work in the transport sectors, it is not, within the scope of this project, possible to gauge their efficacy.