

REPORT



THE AIBN - TEN YEARS "ON THE ROAD"

SUMMARY AND EXPERIENCES

The Accident Investigation Board has compiled this report for the sole purpose of improving road transport safety. The object of any investigation is to identify faults or discrepancies which may endanger road transport safety, whether or not these are causal factors in the accident, and to make safety recommendations. It is not the Board's task to apportion blame or liability. Use of this report for any other purpose than for road transport safety shall be avoided.

*This report has been translated into English and published by the AIBN to facilitate access by international readers.
As accurate as the translation might be, the original Norwegian text takes precedence as the report of reference.*

Photos: AIBN

PREFACE

With this report the Accident Investigation Board Norway wishes to convey some of the experience gathered by the Road Department through its first ten years of existence. As head of the department through all these years, I have found it both exciting and challenging to participate in its establishment and operation.

Our day-to-day work has been a learning experience in many areas. In particular, this applies to understanding the role of the investigation authorities and the complexity of the work. We have also gained new knowledge and experience from the safety cultures of other transport sectors. The form of investigation represents pioneering work in the road environment, and while some people have had high expectations of our investigations, others have been more cautious.

In my experience, what is particularly challenging is the management of information and contact with those who are involved in and affected by accidents. This is very much reflected in the procedures and routines that form part of the AIBN's framework and management tools, and the focus of all our staff is to avoid adding to the burdens of those who are involved in and affected by a stressful situation. Many people have told us that they have appreciated the fact that 'their' accident has been so thoroughly looked into and that many of their questions have been well-answered.

The report concludes with a summary and some reflections concerning what road to take to achieve the National Transport Plan's goal of reducing the number of serious accidents by half before 2024. To further reduce the number of accidents will require even greater effort and collaboration. In order to succeed in going forward with this important work, it is also important to achieve as much common understanding as possible among different stakeholders and contributors.

It is also my hope that this report will help to clarify the AIBN's role and activities as well as the opportunities that are inherent in conducting thorough accident investigations and following them up. I would also like to take this opportunity to thank all my colleagues and others who have contributed to the department's establishment and operation as well as its investigations during the first ten years.



Rolf Mellum
Director, Road Department

TABLE OF CONTENTS

| | |
|--|----|
| THE AIBN'S FRAMEWORK CONDITIONS – MANDATE AND LEGAL AUTHORITY..... | 4 |
| THE AIBN'S INVESTIGATION WORK IS BASED ON: | 4 |
| 1. FACTUAL INFORMATION | 5 |
| 1.1 Notification and reporting of accidents..... | 5 |
| 1.2 Selection criteria for investigation of accidents/incidents | 6 |
| 1.3 Work at the accident scene | 7 |
| 1.4 How investigations are conducted | 8 |
| 1.5 Contact with the parties involved and relevant authorities | 9 |
| 1.6 Submitted reports | 11 |
| 1.7 Safety recommendations | 11 |
| 2. RESULTS | 12 |
| 2.1 Effects on affected parties and road users..... | 12 |
| 2.2 Effects in relation to other public agencies | 12 |
| 2.3 Examples of some important problems that have been elucidated in the AIBN's reports. | 13 |
| 2.4 Subsequent use of reports | 14 |
| 3. SUMMARY AND SOME REFLECTIONS | 17 |
| 3.1 The zero vision and the goal of reducing the number of serious accidents by half | 17 |
| 3.2 'Just culture' as a contribution to better road safety | 17 |
| 3.3 The road forward..... | 17 |

Photo on cover page: AIBN

NOTIFICATION AND REPORTING OF ROAD TRAFFIC ACCIDENTS

| | |
|------------------------|---|
| Period: | 1 September 2005 – 1 September 2015 |
| Accident sites: | National, county and municipal roads in Norway |
| Notification criteria: | Heavy vehicles, coaches, tunnel accidents and ADR accidents |
| Accident types: | Predominantly: Head-on collisions, run-off-road and rollover accidents |
| Type of transport: | Predominantly: Tractor-trailer vehicle combinations, lorries, coaches |
| Parties involved: | Predominantly: Public and commercial transport firms involved in passenger and goods transport. |

THE AIBN'S FRAMEWORK CONDITIONS – MANDATE AND LEGAL AUTHORITY

The AIBN has a common mandate for all transport sectors: *The AIBN:*

- *shall investigate accidents and serious incidents in the aviation, railway, road and marine sectors. The objective of the investigations is to elucidate matters deemed to be significant for the prevention of transport accidents.*
- *shall not apportion any blame or liability under civil or criminal law.*
- *decide itself the scale of the investigations to be conducted, including an assessment of the investigation's expected safety benefits with regard to necessary resources.'*

The AIBN Road Department administers Chapter VII of the Road Traffic Act and its Regulations on Public Investigation and Notification of Traffic Accidents etc. The related preparatory work is documented in Proposition No 50 to the Odelsting (2004-2005). See [Regulations | aibn](#)

THE AIBN'S INVESTIGATION WORK IS BASED ON:

- INDEPENDENCE AND IMPARTIALITY
 - The AIBN is professionally independent and has no ties with any private parties, agencies or public authorities.
- MULTI-DISCIPLINARY LEARNING ENVIRONMENT
 - The AIBN gathers learning and experience from all transport sectors and utilises it across all transport sectors. The transfer of such learning and experience is extremely valuable.
- NON-PUNITIV APPROACH
 - The AIBN's investigations are conducted separately from any criminal proceedings and, in its investigations, the AIBN shall not apportion blame or liability.

The AIBN has a common management system that describes all parts of the investigation process, and it has prepared a set of values that reflect what we do: These values are communicated by the words:

COMPETENT, INNOVATIVE, CREDIBLE and COMPASSIONATE.

1. FACTUAL INFORMATION

1.1 Notification and reporting of accidents

The police and the Norwegian Public Roads Administration (NPRA) shall notify the AIBN in accordance with the Road Traffic Act and its Regulations on public investigation and notification of traffic accidents etc. (the 'Public Investigation Regulations'), when serious accidents or incidents occur that involve vehicles of more than 7,500 kg, coaches or vehicles carrying dangerous goods, or that take place inside tunnels. These agencies are also required to notify the AIBN of any accidents that they, based on an overall assessment, believe the AIBN may be interested in investigating. The AIBN may also choose to obtain information about, and investigate, other types of accidents.

The AIBN has its own 24/7 standby service, and the Road Department has received approximately 1,600 notifications of road accidents and incidents during its 10 years of existence. Around 900 of these have been reported by the police in accordance with the notification criteria set out in the Regulations and have been processed in writing. All notifications received in the course of ten years are documented in the AIBN's logs and archives.

Based on sequence of events and scope, around 75% of the notifications are relatively easily assessed in relation to whether an investigation should be initiated. To a varying degree, the remaining 25% of the notifications require further information, and in some cases, a more extensive pre-investigation before the decision is made on whether to initiate a full investigation. Many pre-investigations are concluded without a full investigation, but the information obtained often provides useful support in deciding whether to investigate other accidents/incidents and in relation to ongoing investigations.

The work involved in receiving and processing notifications requires more than a full-time equivalent, and the need for human resources is often unpredictable. However, using resources for this purpose is essential if we are to gain an overview of and insight into accident scenarios, and help to build and maintain the basic operational competence of the accident investigators.



Figure 1: Incoming notifications requires intensive work and evaluation of large volumes of information in a short time, and is an essential part of the decision on whether to deploy staff and initiate an investigation.

Photo: AIBN

1.1.1 Accident types

More than 70% of the serious accidents that the AIBN is notified of are head-on collisions and run-off-road accidents. This picture coincides with the official statistics, and is indicative of where the greatest potential for reducing the number of seriously injured and fatalities still lies. Rollovers are also represented in our logs but, because these have a moderate degree of severity, such accidents are not always reported to the AIBN. However, the potential injury scope of accidents involving heavy vehicles and high dynamic energy is great.

More than 70% of the notifications involve vehicles categorised as weighing more than 7,500 kg, while 13% of the accidents of which the AIBN is notified involve coaches. Tunnel accidents and accidents involving hazardous waste represent a small proportion both of accidents and of notifications.



Figure 2: Tunnel incidents can have a great high injury potential. Photo from inspection of a new and modern tunnel on the E6. Photo: AIBN

1.2 **Selection criteria for investigation of accidents/incidents**

Unlike other AIBN departments, the AIBN road department is not under any legal obligation to investigate specific types of accidents; it decides which accidents to investigate using its own judgement. The investigations we choose to conduct are to some extent a reflection of the notifications we receive, but we have not been issued clear guidelines concerning which accidents to investigate.

However, the Public Investigation Regulations describe what should be regarded as important in the selection process. The degree of severity shall be taken into account, whether it is one of a series of accidents (is representative of several accidents) and whether it is significant to road safety in general. The main criterion, however, is the potential for learning and for improving road safety. Cases are always selected in relation

to the lessons that can be learnt from them, and in that connection it is important that affected parties are also able to understand this learning effect.

The freedom to choose which accidents to investigate gives us latitude, but also constitutes a challenge in the difficulty on how to identify the learning potential in an early phase.

Up until now, the AIBN has primarily focused on accidents involving commercial transport, though often in combination with private transport. Nevertheless the special report on safety in cars - see [Thematic report concerning safety in cars | aibn](#) concerned eight accidents with three or more fatalities, several of which involved private vehicles only.

1.3 Work at the accident scene

As a rule, the AIBN is notified of an accident after the police have arrived at the scene. The police's incident commander has the best overview of the situation, and provides the AIBN's officer on duty with important information in an early phase. This contact is regulated by law and regulations and in instructions issued by the Director General of Public Prosecutions. In addition to helping the police, the NPRA, which often also arrives at the accident scene early, also contributes valuable information for the AIBN.



Figure 3: The Road Department has its own response vehicle, but may also use other appropriate means of transport to reach the scene of an accident quickly. Photo: AIBN

Pursuant to the Regulations, the AIBN shall immediately consider whether to deploy its resources. The expediency of this depends on whether the accident site has been secured and is untouched. It is a difficult decision to make as there is only a brief window of time, but it is sometimes necessary so that the AIBN can make its own observations and secure documentation. The decision is made in dialogue with the police and is based on cost-benefit considerations, but the complexity of the sequence of events is also an important consideration. The AIBN contacts those who are involved at the earliest possible stage, after considering the practical and ethical aspects.



Figure 4: It is important to document the accident site. Photo: AIBN

1.4 How investigations are conducted

Accident investigations are very demanding in terms of creating and maintaining good contact with the parties involved and managing the information that emerges through the process. Investigations bring us into close contact with those who are affected and there are many considerations that need to be addressed. For practical reasons these are time-consuming processes, even if good guidance can be found in laws and regulations.

The competence requirements for these tasks are high, and our accident inspectors' knowledge, skills and attitudes are challenged every day. Having an open approach to investigations means that they must sometimes adapt their work mid-way through a process, a great deal of patience, perseverance and flexibility is required if our investigations are to be effective. The 12-month deadline is a challenging factor in this context.

The AIBN focuses on building essential competence and following this up, and the fact that we share our resources across all transport sectors greatly contributes to this, among

other things by offering joint basic training. We have also established a joint management system and a set of common methods that governs both our investigations and our official reports.

All our reports are subject to internal quality assurance in accordance with fixed procedures. A draft report is then sent to the affected parties for comment, and sometimes also to important external stakeholders. All the answers we receive are considered and incorporated and the processes are documented. The final report is sent to the Ministry of Transport and Communications and published on the AIBN's website.

Information about ongoing investigations is available on our website at all times. See [Current investigations - road traffic | aibn](#)



Figure 5: Investigations require different methods of documentation. Photo: AIBN

1.5 Contact with the parties involved and relevant authorities

1.5.1 Those who are involved in and affected by traffic accidents

In addition to the many objective facts, key information is also provided by the road users who are involved in an accident and in many cases also by their next of kin. It is incumbent on all parties to provide the AIBN with any information they possess about circumstances that may have a bearing on the investigation. This extended duty to provide information is special, and it gives the AIBN the right to collect all relevant and important information.

Such access to information also entails stringent requirements for handling the information received, and the duty to provide information also entails a duty of confidentiality. Those who provide the AIBN with information under such framework conditions are protected by the Road Traffic Act and the information may not be used as

evidence in a criminal case. Protection against self-incrimination is an important premise in the investigation work, and the disassociation from any follow-up of accidents by the prosecuting authorities is essential.

1.5.2 Relevant authorities

The AIBN maintains close contact with several public agencies. The police are important in the operational phase, and there may also be contact with the prosecuting authorities concerning objective facts where criminal proceedings are being instituted at the same time.

The broadest contact is nevertheless with the NPRA, which has many different roles and broad responsibility for the sector. The AIBN also maintains good contact with the Norwegian Road Supervisory Authority, which is another important stakeholder. The Norwegian Labour Inspection Authority and the health authorities are also relevant contacts in many investigations.



*Figure 6: The AIBN together with the police and the NPRA at the scene of an accident.
Photo: AIBN*

1.5.3 Organisations and managements that are affected by accidents

It is a characteristic of the road sector that it is used by a great many firms and organisations in addition to a large number of private individuals. In many investigations, this means that in addition to the transport firms that are directly involved in an accident, the AIBN must have dealings with associations and organisations in its consideration of safety-related factors. Examples of such organisations are the Norwegian Truck Owners Association, NHO Transport (the Confederation of Norwegian Enterprise's transport section), the Norwegian Transport Worker's Union (NTF) and The Norwegian Union of Transport Employees (YTF). The AIBN is also in touch with other trade associations in the road transport sector.

It is important to have good contact with parties such as transport organisers and facilitators, which have many opportunities to influence safety and can contribute to the wider dissemination of the information and knowledge that emerges.

1.6 Submitted reports

As of 1 September 2015, the AIBN Road Department had published 41 reports during the ten-year period. Five of these have been translated into English in full, and they can all be easily downloaded from our website; see [Published reports - road traffic | aibn](#)

Three special reports have been published during the ten-year period, based on a total of 15 accidents and to some extent also on previous accidents. One report concerns safety during winter operations (three accidents), another concerns safety in cars (eight accidents) and a third concerns the safety challenges involved in transporting hooklift containers by road (four accidents).

All the reports are written using a common standard template that reflects the investigation process. It is a logical set-up for the presentation of the facts, analyses, conclusions and safety recommendations. The investigations are demanding and labour-intensive. Seen in relation to available resources, the number of reports is on a par with those of the other AIBN transport departments.

1.7 Safety recommendations

The reports and related safety recommendations are submitted to the Ministry of Transport and Communications, which is responsible for following up and closing the recommendations. The NPRA assists the Ministry with this work.

All recommendations can be related to the specific incident/accident that was investigated. Some of the recommendations address safety improvements to underlying factors that can be made at the managerial/organisational level, in some cases at the regulatory level.

A total of 118 safety recommendations have been made in connection with the 41 reports that have been published. These can be broken down by area/topic as follows:

| Topic/area | Number | in % |
|-------------------------|--------|------|
| Road users | 19 | 16% |
| Vehicles | 26 | 22% |
| Roads | 49 | 42% |
| Transport companies/HSE | 24 | 20% |

2. RESULTS

It is difficult to put a figure on the effect of the AIBN's work relating to road safety, as it is part of a whole, along with all the other measures that have been implemented. Many parties, including those at the political level, consider road safety to be a high priority, and ambitious targets have been set for a further reduction of the number of fatalities and severe injuries. A specific goal has been set to reduce the number of fatalities and severe injuries by half before 2024 compared with 2012.

The AIBN's framework conditions, mandate and organisation are highly suitable for identifying underlying causal factors and gathering new knowledge through thorough accident investigations. By doing so, the AIBN can help to achieve the goal of reducing the number of serious accidents by half, but the effect of our efforts depends on many factors. Some of our experiences are described below.

2.1 Effects on affected parties and road users

In the AIBN's experience, almost everybody who is involved, whether directly or as next of kin, expresses satisfaction at being subject to our thorough investigations. In addition to often being provided with good answers to many questions, they also find it valuable to be able to tell somebody about all the aspects of a situation, and without the fear that what they say will be used against them for the purpose of prosecution or in a liability case.

Organisations/transport firms that are subject to our investigations largely take a positive view of their safety being reviewed once an accident has actually happened. With few exceptions, the AIBN's investigations appear to trigger audits of internal safety systems and lead to a greater focus on internal safety in general. We are often told that participation in the investigation has resulted in greater motivation for improvements and useful learning. The AIBN also encounters some parties who are strongly present in the transport sector and who already have a heavy focus on safety, and we, in turn, see this as good support for our work and as motivational for the AIBN in our efforts.

2.2 Effects in relation to other public agencies

The NPRA receives by far the greatest number (approximately 75%) of all safety recommendations submitted by the Road Department in AIBN. This is only natural as this is a large and important agency with many roles. Experience shows that the AIBN's reports and safety recommendations help to change the NPRA's guidelines and internal procedures as a road management agency, and also its prioritisation of supervisory activities relating both to road users and to vehicles. They also concern the NPRA as the agency responsible for the road sector and as an important participant in the action plan for road safety under the National Transport Plan.

The police have also received safety recommendations from the AIBN concerning prioritisation of their control activities. The AIBN has identified weaknesses regarding taking blood samples from dead victims when a road accident is being investigated by the police, and this has led to a change of procedure.

Safety recommendations received by the Norwegian Labour Inspection Authority on the basis of our investigations have contributed to amendments of procedures and regulations.

Following the AIBN's investigations of some major tunnel fires, the Directorate for Civil Protection has also received safety recommendations relating to firefighting and rescue operations.

The health authorities are involved with road users in many ways, and the AIBN has submitted safety recommendations that recommend more stringent medical requirements and follow-up of persons with driving licences. Challenges identified relating to emergency medical response efforts have also increased the focus on establishing procedures and compliance with procedures.

The Ministry of Transport and Communications has received safety recommendations in those cases it has been natural to raise them to that level.

Safety recommendations that could influence EU directives have also been sent to the NPRA as the representative of the Norwegian authorities. The AIBN's investigations have identified weaknesses in regulations and framework conditions, particularly relating to the technical condition of vehicles. Identifying such weaknesses can contribute to improvements in road safety, both nationally and internationally. In the AIBN's experience, good quality work as well as thorough documentation and follow-up are required in order to have any impact at this level.

2.3 **Examples of some important problems that have been elucidated in the AIBN's reports.**

[Report Road 2007/01](#): Run-off-road accidents with heavy and high loads.

This investigation concerns two almost identical accidents and discusses the challenges involved in transporting large and indivisible loads, and it shows the need for loads to be better handled and secured. The investigation shows that there is a distinct gap between necessary and actual competence in this area, and that there is a significant potential for **improving safety in connection with the performance of such transport assignments**.

[Report Road 2007/03](#): Head-on collision involving wheel loader at Gjedrem in Rogaland County.

The investigation showed that the manoeuvre controller had been changed without adequate attention to safety, and it caused **Volvo to alter** and modify 8,000 wheel loaders worldwide. This is evidence of a **strong safety culture on the part of the manufacturer**.

[Report Road 2012/01](#): Special report on vehicle safety

The investigation showed that there was a strong relationship between the **failure to use safety devices and the severity of the injuries sustained** in a total of eight accidents with three or more fatalities.

[Report Road 2012/03](#): Safety-critical factors relating to hooklift containers

The investigation showed that there was a **lack of standardised fastening devices and dimensions, maintenance and follow-up in the form of inspections** and, in many cases, unsatisfactory stability in connection with the carriage of such containers.

[Report Road 2012/04](#): Head-on collision at Try in Søgne Municipality, Vest Agder County

The investigation showed that **blood samples** taken from dead persons without a full post mortem examination are **unreliable**. This led to changes in procedures and regulations.

[Report Road 2013/01](#): Head-on collision in Hyvingstunnelen on E16

The investigation showed major weaknesses in the **follow-up of friction values on bare roadways**, and the NPRA has established new procedures for the inspection and follow-up of surface friction on roads in summer, partly on the basis of this report and a previous report from the AIBN.

[Report Road 2013/05](#): Fire in a heavy goods vehicle in the Oslofjord tunnel

[Report Road 2015/02](#): Fire in a heavy goods vehicle in the Gudvanga tunnel.

These investigations have been extremely extensive, complex and demanding, and important public interests have been affected by these incidents. The AIBN's focus has been on the safety of road users, and it **found that there is a large safety follow-up backlog** in relation to long single-bore tunnels. The investigations have also shown that there is a need to revise **the way in which fire extinguishing and rescue efforts are prioritised**.

2.4 Subsequent use of reports

Subsequent use of reports is important if we are to ensure the best possible utilisation of the extensive work that has been put into the investigations and the writing of the reports. The following are some examples of how such subsequent use can contribute to learning and improving safety.

2.4.1 Basis for areas of supervision

The Norwegian Road Supervisory Authority, which was established in 2011, uses the AIBN's reports as a basis for its selection of supervisory areas, in accordance with normal practice in the other transport sectors. Examples of areas in which the Road Supervisory Authority has conducted supervisory activities based on the AIBN's investigations are the follow-up of maintenance contractors, works notification, the safety of redirected traffic routes, road-surfacing and road safety in connection with development projects.

2.4.2 Basis for amendment of EU directive

In two reports (2012/2 – Lavangsdalen and 2013/02 – Elverum) it has been demonstrated that the scope of injuries sustained in head-on collisions increases as a result of secondary

events due to lack of protection of steering mechanisms on heavy vehicles from being deformed by collision impact. The NPRA's view has been accepted and this will be taken into account in a new EU directive based partly on arguments presented in the AIBN's reports.

2.4.3 Safety in connection with fires in tunnels

Investigation reports following fires in the Oslofjord and Gudvanga tunnels have shown that there are challenges relating to the safety of road users in terms of exposure to smoke when fires break out in long single-bore tunnels. The safety of road users has not been sufficiently safeguarded, and both national and international professional groups are making active use of these reports as references.

2.4.4 Improving safety in organisations

In several of the investigations involving passenger and goods transport companies, the investigations have found a lack of focus on safety on the part of transport companies. In the AIBN's experience, the reports have contributed to a change of internal procedures and safety management systems.

2.4.5 Investigations and reports as sources for lectures and training

In the AIBN's experience, many educational establishments use AIBN reports as part of their curricula and learning material.

The AIBN is also in demand to give talks in many establishments, both in Norway and abroad. The talks we give are always based on our investigations and customised to the objectives and purpose in each case. Examples of establishments that request us to give talks:

- Universities – use of reports in safety subjects
- The Institute of Transport Economics – courses
- The Police University College
- Driving instructor colleges
- Publishing companies offering instruction material for driver training
- Fire and rescue services
- The NPRA - safety management and in-depth studies
- The Norwegian Armed Forces' transport department
- Transport seminars – the automotive industry
- Health authorities and forensic teams

The AIBN has chosen to grant requests for such activities, and the assignments are distributed between the department's employees. We take on such assignments, not only to satisfy the recipients' wishes, but also because it helps to make our investigations known and thus helps to enhance the learning that can be gained from them. It is an inspiration to all our staff to be able to disseminate the results of our investigations in this manner.

2.4.6 International contact

The AIBN has carried out investigations involving foreign parties and agencies. This has given us an opportunity to demonstrate internationally how we work as a public

investigation authority. Our reports are increasingly being translated into English, and, in our experience, they are well-received abroad. We see our reports being used by international professional environments, and foreign transport companies that are affected taking a positive view of our investigations.

Nevertheless, it is a pity that there is an absence of international regulations requiring similar investigations in the road sector as in other transport sectors.

3. SUMMARY AND SOME REFLECTIONS

3.1 The zero vision and the goal of reducing the number of serious accidents by half

We are seeing a positive trend and development in accidents, in that the number of people who are injured or die in road accidents is decreasing as a result of the targeted and long-term efforts of many parties. We are very pleased with this, and it is essential that this trend continues.

The goal of reducing the number of serious accidents by half by 2024 is an ambitious one, and will require intensive efforts by all of the parties involved. In the AIBN's experience, even more effort should be put into learning why accidents occur and identifying underlying factors that have an impact on accidents. Causal factors are often found to be both numerous and complex, and thorough and impartial accident investigations may be an important contribution towards reaching the goal.

If findings and analyses are to have a positive impact on safety, it is essential that the investigations are of good quality and are followed up by specific measures.

3.2 'Just culture' as a contribution to better road safety

The AIBN's investigations have been seen to represent a new way of thinking about safety in the road sector. Transfer of experience from other transport sectors, particularly aviation, is very valuable, and there is still a great potential for learning across the transport sectors.

In aviation, a genuine understanding of the importance of attention to safety at all levels has been established. The concept of 'just culture' prevails – a safety culture that is exclusively concerned with promoting safety and avoids focusing on punishment and apportionment of blame.

'Just culture' takes account of the fact that people make mistakes, and people are not punished as long as they act within given limits and in accordance with the training they have received. Where such a culture prevails, all those involved in preparing for a transport operation help those who carry out the operation to do so in the safest possible way. Gross negligence is not tolerated.

The AIBN's experience from the road sector is that those who become involved in the AIBN's investigations, in which punishment and apportionment of blame is not an issue, subsequently have a greater focus on learning and improvement within their own organisation. It helps them to give a higher priority to safety and to establish a stronger safety culture in the organisation. The effect of this work comes in addition to the findings, analyses and safety recommendations in the submitted reports, and it is an effect that develops gradually over time.

3.3 The road forward

The Institute of Transport Economics has published a report which states that familiar road safety measures in use today may considerably reduce the number of fatalities and serious injuries on the road, but that the goal of halving the number of fatalities and

serious injuries by 2024 is unlikely to be achieved without redoubling our efforts and implementing new measures. Ways of making better use of ICT is one area in which we could increase our efforts.

Based on the AIBN's experience, targeted supervisory activities and measures to influence the safety focus of organisations will nevertheless be necessary. The introduction of traffic safety standards such as ISO 39001 is one example of steps in the right direction.

At the same time, the AIBN believes that more work should be done to establish a 'just culture' in the road sector. It is this culture and mindset that, together with robust common regulations, have contributed to establishing such a high level of air traffic safety both at the national and international level. More should be done to achieve such a culture in the road sector as well.

Lillestrøm – 1 September 2015