

Annual Report 2013

Accident Investigation Board, Norway Railway Department

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Introduction

The Accident Investigation Board Norway (AIBN) is a multimodal organisation covering four transport modes. It was established in 1989 to investigate air accidents and incidents. The first railway accident investigation started 1 July 2002. Today, the AIBN is a multi-modal body investigating accidents and incidents in aviation, railways (including trams and metros), road transport and the marine sector. The different transport modes are organised in different departments within the AIBN reporting to the Director General. The multi-modal concept has been very successful in relation to stimulating cooperation, how to approach an investigation, methodology, sharing relevant safety issues and learning from the other transport sectors. In 2002 the AIBN's mandate was expanded to cover railway accidents, in 2005 road accidents and in 2008 marine accident investigations were included in our mandate.

Rail accident investigation in Norway is subject to the Directive for the Accident Investigation Board Norway, laid down by the Ministry of Transport and Communications on 12 June 2002. The AIBN itself decides the scale of the investigations to be conducted, including an assessment of the investigation's expected safety benefits with regard to resources required.

The AIBN is independent and focus entirely on safety and not apportion blame or liability, nor do we enforce law or carry out prosecutions. The most important elements in the railway safety investigations are to improve the safety of railways, learning from experience and preventing accidents from recurring. Over the years, the investigations have increasingly addressed the human element, focusing on the system of interaction between human factors, technology and organisational factors.

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Regulation

Railway accident investigation in Norway is regulated in detail by the Norwegian Act of June 3rd 2005, No.34, relating to notification, reporting and investigation of railway accidents and railway incidents, and regulations stipulated pursuant to the Act.

EUs safety directive for railway was adopted and made official March 1st 2006 as Regulation 2006-03-31 nr 378. *Regulation for official investigation of railway accidents and serious incidents etc.* (“The Railway Investigation regulation”).

Mandate

AIBN shall investigate accidents and 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. The AIBN shall not apportion any blame or liability under civil or criminal law.

The AIBN itself decides the scale of the investigations to be conducted, including an assessment of the investigation's expected safety benefits with regard to necessary resources.

Budget

The 2013 budget is NOK 62.500.000,-

Organisational flow charts

Relationship between the AIBN and other national bodies:

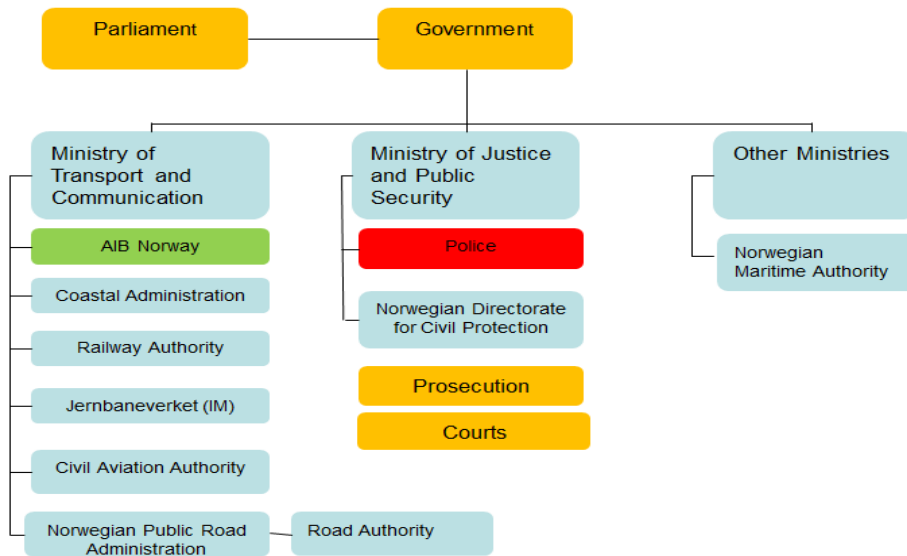


Figure 1: AIBN and other national bodies.

Relationship between the AIBN and the railway sector:

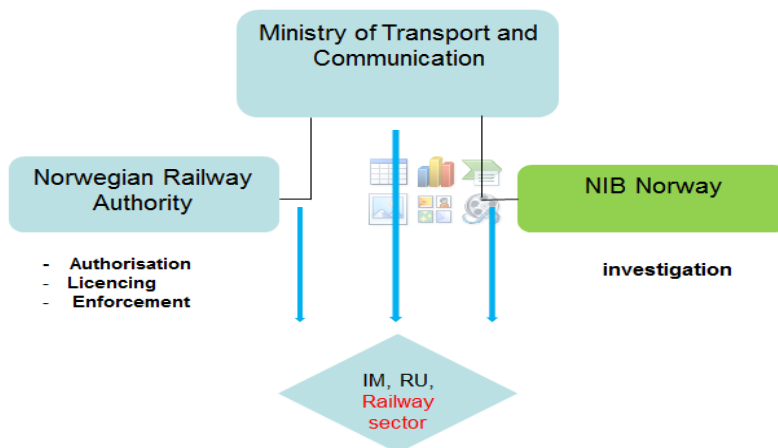


Figure 2: AIBN and the railway sector.

Accident Investigation Board Norway (AIBN) - Organisation

The AIBN organisation as of 31st December 2013:

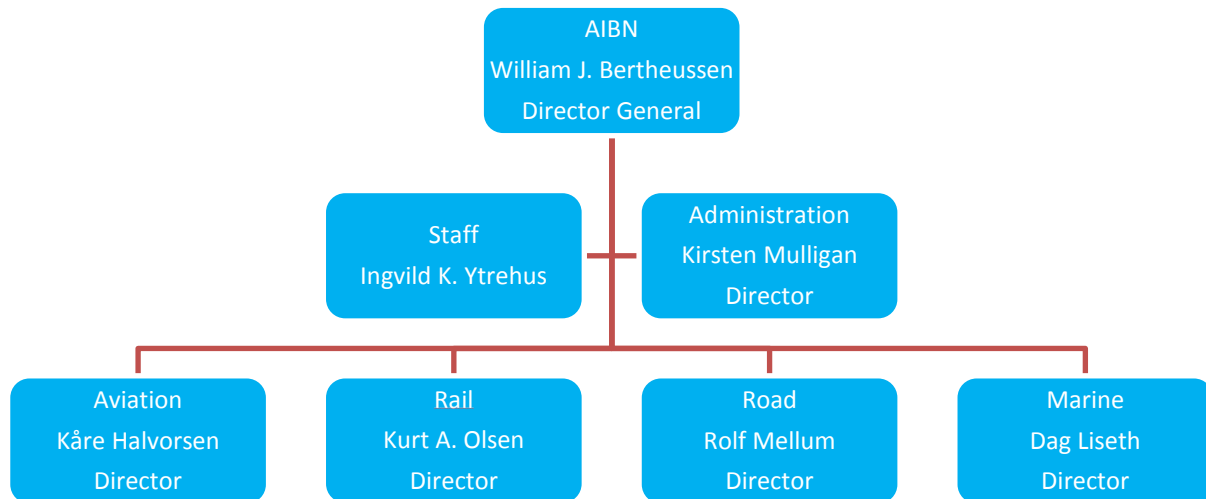


Figure 3: The AIBN organigram.

The AIBN employs 5 railways inspectors with either a professional railway or investigation background, and who have been given extensive and bespoke training concerning railway operations, railway engineering and investigation skills.

All inspectors carry an AIBN identification card, which identifies their powers at the scene of an investigation.

The AIBN Inspectors have the power to:

- Enter railway property, land or vehicles.
- Seize anything relating to the accident and make records.
- Require access to and disclosure of records and information.
- Require people to answer questions and provide information about anything relevant to the investigation.

Notifications of accidents and incidents – key numbers

The AIBN, Railway department received totally 343 notifications by telephone in 2013. The number of notification includes rail-, metro- and tram traffic (LTR). According to the Norwegian Railway Authority (responsible for official statistics), the total number of reported accidents and incidents is on the average level compared to the previous years.

Fourty-two accidents were registered with a total of 19 fatalities.

Seven accident and incident investigations were started this year.

The AIBN, Railway department was involved in 7 investigations as of 31st December 2013.

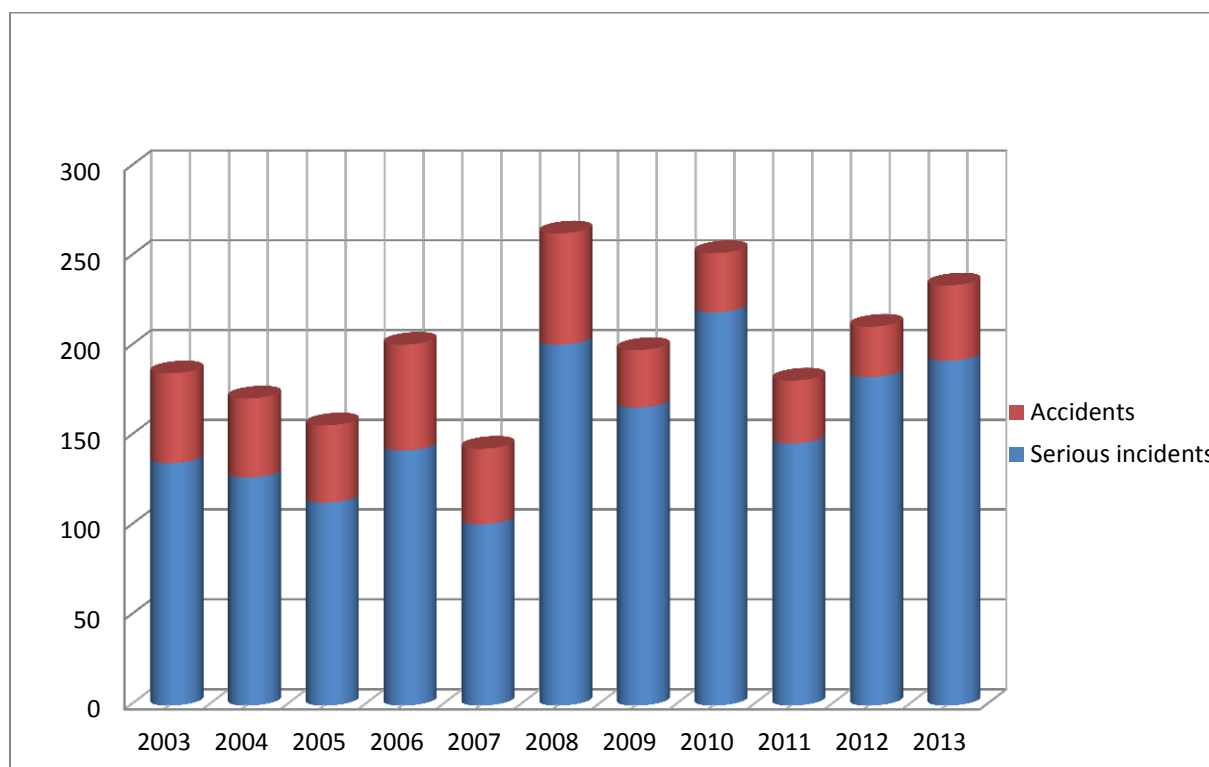


Figure 4: Key numbers, reported (72 hours) railway accidents and serious incidents.

	2004	2005	2006	2007	2008	2009	2010	2011	2012	2013
Serious railway incidents	127	113	142	101	201	166	219	146	183	192
Railway accidents	44	43	59	42	62	32	33	35	28	42
Total	181	156	201	143	272	198	252	181	211	234
Published reports	15	7	11	13	9	11	9	10	9	9

Table 1: Key numbers, reported railway accidents and serious incidents (not official statistics).

The Norwegian Railway Authority (Statens jernbanetilsyn) is the responsible body for the official national statistics regarding railway accidents, serious incidents and incidents.

Other activities

During 2013, several meetings have been arranged with the Norwegian Railway Authority, Infrastructure Manager (Jernbaneverket) and the operators, including metro and tram operators. The meetings have focused on closing safety recommendations, accident reporting and classification, organisational changes, point of contact etc.

Norway, Sweden, Denmark, Finland, Estonia and UK are members of the Nordic Network of Accident Investigation Boards (NRAI). The network organises one meeting per year, where the main focus is to inform each other about on-going investigations, safety learning, ERA network and task force meetings and any other business common to the Nordic Region. ERA is represented in the NRAI meetings.

Investigation reports

The Accident Investigation Board, Norway, Railway Department, published 9 final investigation reports, within 12 months after the date of the occurrence. This gives approximately 2 reports pr. year for each Inspector of Accident. See appendix A for details.

Key elements of the report (roadmap):

The AIBN reports follow the Directive 2004/49/EC of the European Parliament annex IV (Principal content of accident and incident investigation report) and include the following key elements:

- Notification of the accident
- Summary (in Norwegian and English language)
- Facts

- Investigations carried out
- Analysis
- Conclusion
- Planned and implemented measures
- Safety recommendations (in Norwegian and English language)
- References
- Appendices

Safety recommendations

The Accident Investigation Board Norway, the Railway department, published 9 safety recommendations in 2013. An overview of the recommendations is given in appendix B.

Status of the safety recommendations, (see actions taken for the 2013 safety recommendations below):

Year:	2009	2010	2011	2012	2013
Open:	2	2	1	3	2
Closed:	19	14	15	6	4
Total:	21	16	16	9	6

Table 2: Safety recommendations.

Appendix A - Published reports 2013

See link: <http://www.aibn.no/Jernbane/Avgitte-rapporter>

No:	Identification:	Date of occurrence:	Report published:
1	Railway accident at Dombås station , Dovre line, train 5701.	13.01.2012	11.01.2013
2	Railway accident near Nykirke station, Vestfold line, train 12926.	15.02.2012	12.02.2012
3	Serious incident, Oslo Central Station, train 5077.	27.02.2012	27.02.2013
4	Serious incident, Godlia station, Østensjøbanen.	31.05.2012	27.02.2012
5	Serious incident, Evja level crossing, Sørlandsbanen line, train 521.	22.08.2012	19.06.2013
6	Railway accident. Alnabru terminal.	14.09.2012	26.06.2012
7	Serious incident, Gardermoen station, Gardermobanen, train 3560.	07.10.2012	17.07.2012
8	Serious incident, Dal station, Oslo line.	26.09.2012	22.08.2013
9	Trend investigation SPAD	2010-2012	17.12.2013

Appendix B - Safety recommendations 2013

The safety recommendations are translated from Norwegian language. The Norwegian text remains the official version of the safety recommendations. Should ambiguity arise between the two, the Norwegian text takes precedence.

See link: <http://www.aibn.no/Jernbane/Avgitte-rapporter>

Report No.	Rec. No.	Safety recommendation.	Status.
2013/01	01	<p>Safety recommendation RW no. 2013/01T</p> <p>The first thing that failed before the train derailed at Dombås, was the primary support (torque link) for one of the engines. After that, the engine was held in place by the emergency support, which is the final barrier before the engine comes lose. After a while, the emergency support also failed, so that the engine dropped towards the track. The railway legislation requires documentation to be available of the vehicle having been tested on the track with respect to operational loads and anti-derailment safety. It is the railway undertaking CargoNet AS that has overriding responsibility for the safety of the rolling stock it uses. The manufacturer Bombardier is carrying out work on track measurements in Norway, and calculation of expected service life and loads on the torque links and emergency supports for the engines.</p> <p>The AIBN recommends that the Norwegian Railway Authority follows up that CargoNet AS is able to document that the railway legislation's requirements are met as far as supports and emergency supports for engines are concerned, based on actual loads, including track power measurements carried out in Norway.</p>	<p>Status: The processing of the safety recommendation has been concluded.</p> <p><u>Grounds for closing the case</u> CargoNet will introduce measures that can be briefly summed up as follows: (1) inspection of dimensioning of components, (2) confirmation of maintenance intervals and documentation, and (3) development of better fault messages for loose traction engines. CargoNet has introduced more stringent requirements for the inspection of relevant components until the measures have been fully implemented. Statens jernbanetilsyn (the National Railway Authority) considers these measures to be satisfactory.</p>
2013/02	02	<p>Safety recommendation RW no 2013/02T</p> <p>At the end of the passing tracks at Nykirke station, the line speed is reduced from 130 km/h to 70 km/h before a curved section. The speed at which the train was travelling was too high to manage the curve, and all the train's five carriages derailed and hit the cliff on the left-hand side of the tracks. Most of the Norwegian railway network is not equipped with a speed monitoring system capable of intervening if a train exceeds the line speed.</p> <p>The Accident Investigation Board Norway recommends that the Norwegian Railway Authority instruct the National Rail Administration to identify the places where large reductions in speed could pose a danger in connection with curves, and to implement</p>	<p>Status: The report and the safety recommendation are being processed. Jernbaneverket's (the Norwegian National Rail Administration) work on JB No 2013/02T was the topic of a supervisory activity in May 2014. It is expected that the case processing will be concluded when the supervision report is made available.</p>

		sufficient barriers to improve safety in connection with large reductions in speed.	
2013/04	03	<p>Safety recommendation JB no. 2013/03T</p> <p>The points that were run through at Godlia on 31 May 2012 could have caused a railway accident. Necessary control and testing of the points had not been carried out before clearance was granted for their use. The infrastructure entity has an extensive management and control system, which includes several different documents describing how point machines are to be tested and inspected, and routine maintenance procedures include detailed checklists for inspection and audits of point machines. The basis for testing following repairs and replacements must be prepared in each individual case and contains little information about what should be tested and the purpose of the testing.</p> <p>The Accident Investigation Board Norway recommends that the Norwegian Railway Authority follow up to ensure that Oslo T-banedrift AS adjust and simplify the existing instructions and procedures relating to inspection and testing of Safety marked activities, to ensure that all necessary inspection and testing are carried out both in projects and in connection with ordinary maintenance.</p>	Status: The processing of the safety recommendation has been concluded. The case has been closed on the basis of a report from Oslo T-banedrift AS (now Sporveien T-banen AS) on how the incident has been followed up and a supervisory activity carried out in December 2013 (Supervision Report No 2013-05).
2012/05	04	<p>Safety recommendation JB no 2013/04T</p> <p>This incident is very similar to the level crossing accident near Hokksund in 2011 and at Viken level crossing near Gjøvik in 2009. The situations are similar, but in this case, we know for certain that the person was listening to music with earplugs, and that visibility was good. This kind of problem with earplugs is a recurring and increasing one, and the Accident Investigation Board Norway (AIBN) believes that greater focus and measures are required to combat the problem.</p> <p>The AIBN recommends the Norwegian Railway Inspectorate to advise the Norwegian National Rail Administration, in collaboration with other relevant infrastructure managers, to consider whether information campaigns are necessary about the use of earplugs, vigilance and mental alertness in traffic in general.</p>	Status: The processing of the report has been concluded, and the supervisory authority makes reference to a separate letter of 9 September 2013 to the Ministry of Transport and Communications. Our reference: 12/2913-12. Reference is also made to the Ministry's letter of 25 November 2013 to Jernbaneverket (the Norwegian National Rail Administration) with ref. no 13/1038.
2013/07	05	<p>Safety recommendations JB no 2013/05T</p> <p>The track, platform and railway terminal is owned by the Norwegian National Rail Administration, and Flytoget AS, NSB AS and Narvesen AS lease space in the terminal building. Flytoget AS is the only one of these parties that has procedures in place for the evacuation and clearance of the station area. The National Rail Administration in its capacity as infrastructure manager shall define requirements for the railway undertakings through the track access</p>	<p><i>Status: The processing of the safety recommendation has been concluded.</i></p> <p><u>Grounds for closing the case:</u> The contractual relationship and ownership of the interface at Gardermoen have been clarified. Procedures and guidelines for evacuation of those who rent premises in Jernbaneverket's station area at Gardermoen will be established when the revision of the evacuation plan is</p>

		<p>agreements, and thereby also define requirements for, <i>inter alia</i>, escape and evacuation plans and the coordination of routines and procedures.</p> <p>The Accident Investigation Board Norway recommends that the Norwegian Railway Authority review safety-related organisational factors at all stations that concern more than one enterprise. This is in order to clarify ownership and leasing matters, and to ensure that emergency response and evacuation procedures are functional and based on a correct interface between the National Railway Authority as the chief authority and the other enterprises.</p>	<p>completed in the course of the first quarter 2014. Jernbaneverket will also review safety-related organisational factors at all stations where several parties are involved, in order to ensure that emergency response and evacuation procedures are functionally related to the interface between Jernbaneverket and other undertakings.</p> <p>The supervisory authority will continue to follow this up in connection with its follow-up of Supervision Report No 2013-3, and of coordinated supervision by Oslo Fire and Rescue Service and Statens jernbanetilsyn as described in Supervision Report No 2013-24.</p> <p>Flytoget AS was ordered to describe its follow-up of the report. Following a closer assessment, Flytoget AS did not find it necessary to change the procedures for handling frequently recurring faults in the high-voltage power system. The accident was also reviewed at the annual safety course for the personnel. Security guards and customer service personnel at Gardermoen have reviewed same, in addition to which the procedure for evacuation of Oslo Airport has been reviewed again and radios have been introduced to enable internal communication between the security guards. The security guards have also been given one of Flytoget AS's internal radios, so that they can communicate with the airport express train crew.</p> <p>Based on the potential harm of such an incident, the supervisory authority made the railway undertakings aware of the Accident Investigation Board Norway's report on the incident.</p>
2012/08	06	<p>Safety recommendations JB no 2013/06T</p> <p>The Norwegian National Rail Administration (NNRA) was aware of the risk of passing a stop signal at Dal station. It took nearly six years from the first reports about Dal station were recorded until physical changes were made to the signalling system. Previous investigation reports show several examples of accidents where the NNRA has been aware of the risk before an accident occurred. This risk concerns both reported undesirable incidents and maintenance thresholds that have been exceeded or not identified.</p> <p>The Accident Investigation Board Norway</p>	<p>Jernbaneverket was aware of the risk of passing a stop signal at Dal station. It took nearly six years from the first reports about Dal station were recorded until physical changes were made to the signalling system. Previous investigation reports show several examples of accidents where Jernbaneverket has been aware of the risk before an accident occurred. This risk concerns both reported undesirable incidents and maintenance thresholds that have been exceeded or not</p>

	<p>recommends that the Norwegian Railway Inspectorate follow up that the NNRA reviews and improves the processes that are designed to identify and assess reported cases that require immediate action.</p>	<p>identified. The Accident Investigation Board Norway recommends that Statens jernbanetilsyn follow up that Jernbaneverket reviews and improves the processes that are designed to identify and assess reported cases that require <i>immediate action</i>.</p> <p>Status: The processing of the safety recommendation has been concluded.</p> <p><u>Grounds for closing the case</u></p> <p>Jernbaneverket has provided documentation that the concrete circumstances at <i>Dal</i> station have been rectified. The problems associated with stations with inadequate safety zones are being handled as part of the follow-up of Report No JB 2010/08. Statens jernbanetilsyn concludes its formal consideration of the recommendation, but the problem concerning Jernbaneverket's processes for identifying and assessing reported cases that are in need of immediate action will also be considered in its other activities in relation to Jernbaneverket.</p>
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Appendix C – Directive for the Accident Investigation Board Norway

Laid down by the
Ministry of Transport and Communications on 12 June 2009.

1 Organisation

The Accident Investigation Board Norway (AIBN) is an administrative agency that reports to the Ministry of Transport and Communications. The AIBN is an independent body as regards professional issues.

The areas of road, air and railway transport are the responsibility of the Ministry of Transport and Communications. Marine transport is the responsibility of the Ministry of Trade and Industry.

The Ministry of Transport and Communications cannot instruct the agency in professional matters in those areas for which the AIBN is responsible. With the exception of such matters as stated in Section 476, seventh subsection of the Norwegian Maritime Code, the same applies to the Ministry of Trade and Industry within the marine sector.

2 Objective

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. The AIBN shall not apportion any blame or liability under civil or criminal law.

The AIBN itself decides the scale of the investigations to be conducted, including an assessment of the investigation's expected safety benefits with regard to necessary resources. Details of the objectives within the various transport sectors:

Aviation

The AIBN shall investigate aviation accidents and serious aviation incidents within the framework stated in Act No. 101 of 11 June 1993 relating to Aviation (the Aviation Act), Chapter XII Notification, reporting and investigation of civil aviation accidents and civil aviation incidents etc., and regulations stipulated pursuant to the Act. Reference is also made to Council Directive 94/56/EC of 21 November 1994 establishing the fundamental principles governing the investigation of civil aviation accidents and incidents.

Railways

The AIBN shall investigate railway accidents and serious railway incidents within the framework stated in the Act of 3 June 2005, No. 34, relating to notification, reporting, and investigation of railway accidents and railway incidents etc. (the Railway Investigation Act), and regulations stipulated pursuant to the Act.

Road traffic

The AIBN shall investigate serious road accidents and road incidents within the framework stated in the Act of 18 June 1965, No. 4, relating to road traffic (the Road Traffic Act),

Chapter VII Investigation of traffic accidents etc., and regulations stipulated pursuant to the Act.

Marine

The AIBN shall investigate marine accidents within the framework stated in the Norwegian Maritime Code of 24 June 1994, No. 39, Chapter 18 (II) Maritime inquiries, and regulations stipulated pursuant to the Code and obligations Norway has assumed under international law.

3 Delineation

The activities of the AIBN do not comprise areas of responsibility that come under the Police and Prosecution Authority, the Armed Forces, the Norwegian Railway Inspectorate, the Norwegian Public Roads Administration, the Norwegian Civil Aviation Authority or the Norwegian Maritime Directorate.

The AIBN shall also cooperate with other parties to the extent necessary, where this may be beneficial in terms of resource use and user-friendliness.

4 Duties

Within the framework of current legislation the responsibilities of the AIBN shall include:

- investigating transport accidents/incidents as mentioned in Item 2,
- preparing reports containing a statement from the AIBN on the causes of the accident/incident and any recommendations on matters the responsible party should consider rectifying to prevent re-occurrences of the same or similar nature, but without outlining specific solutions.
- performing special duties of significance for safety as may be imposed on the agency by the Ministry of Transport and Communications, and for maritime matters in consultation with the Ministry of Trade and Industry, pursuant to statutes and regulations,
- representing the Ministry of Transport and Communications and/or the Ministry of Trade and Industry as required, or participating in meetings with the said ministries in various international organisations and forums within the relevant transport sectors.
- issuing comments/statements on matters submitted by the Ministry of Transport and Communications, and for maritime matters in consultation with the Ministry of Trade and Industry, to the extent requested by the ministries, assisting in processing cases, etc.

The AIBN shall report to the Ministry of Transport and Communications in the course of the year and in a separate annual report on the agency's activities and results.

The activities shall be conducted within the framework of current statutes, rules and regulations. Cases shall be considered in accordance with generally accepted administrative principles and applicable rules for case processing in the public sector.

5 Day-to-day management

Day-to-day management of the AIBN is exercised by the Director General. The Director General is appointed by the King upon recommendation from the Ministry of Transport and Communications.

The Director General shall:

- inform the Ministry of Transport and Communications of important matters that come under the AIBN's area of responsibility,
- ensure good quality in cases submitted to the Ministry of Transport and Communications,
- decide all cases that do not require submission to a higher authority,
- ensure that the AIBN is run efficiently in accordance with current statutes, rules and regulations and the requirements stipulated in the management dialogue,
- ensure that there are documentable systems for internal control and risk management, and that evaluations are conducted of the agency's efficiency, goal achievements and results.

Within limited areas the Director General may delegate authority to other employees of the AIBN and issue further instructions for the performance of the delegated authority in general or for individual cases.

6 Authority to issue a directive

The Ministry of Transport and Communications has the authority to stipulate a new directive or make changes in the directive.

7 Entry into force

This directive enters into force on 12 June 2009.

From the same date the directive for the AIBN of 21 June 1999 with subsequent changes is repealed.