Norwegian Safety Investigation Authority

ANNUAL REPORT 2020

Norwegian Safety Investigation Authority

Railway Department

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Norwegian Safety Investigation Authority
Lillestrøm, September 2021

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Introduction

The Norwegian Safety Investigation Authority (NSIA) is a multimodal organisation covering four transport modes. In year 1989, it was set up to investigate air accidents and serious incidents. The first railway accident investigation started 1 July 2002. Today, the NSIA is a multi-modal body investigating accidents and serious incidents in aviation, rail (including LTR, tramways and metros), road transport, marine and military. The different transport modes are organised in different departments within the NSIA 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 year 2002, the NSIA's mandate was expanded to cover railway accidents and serious incidents, in 2005 road accidents and marine accident in 2008. Military accidents became part of NSIA's mandate on 1st of July 2020.

Rail accident investigation in Norway is subject to the Directive for the Norwegian Safety Investigation Authority, laid down by the Ministry of Transport on 12 June 2002. The NSIA itself decides the scale of the investigations, including an assessment of the investigation's expected safety benefits with regards to resources required.

The NSIA is independent, 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 organizational factors. In addition, the NSIA addresses Safety Management System (SMS), safety culture etc.

Index

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. The act includes railway, metro, LTR and tramways.

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").

The transposition of Directive (EU) 2016/798 of 11 May 2016 on railway safety into Norwegian legislation has not been adopted.

Mandate

NSIA shall investigate accidents and incidents in the aviation, rail, road, marine and military.

The objective of the investigations is to elucidate matters deemed significant for the prevention of transport accidents. The NSIA shall not apportion any blame or liability under civil or criminal law.

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

Budget

The 2020 total budget is NOK 84900000,-

Organisational flow charts

Relationship between the NSIA and other national bodies:

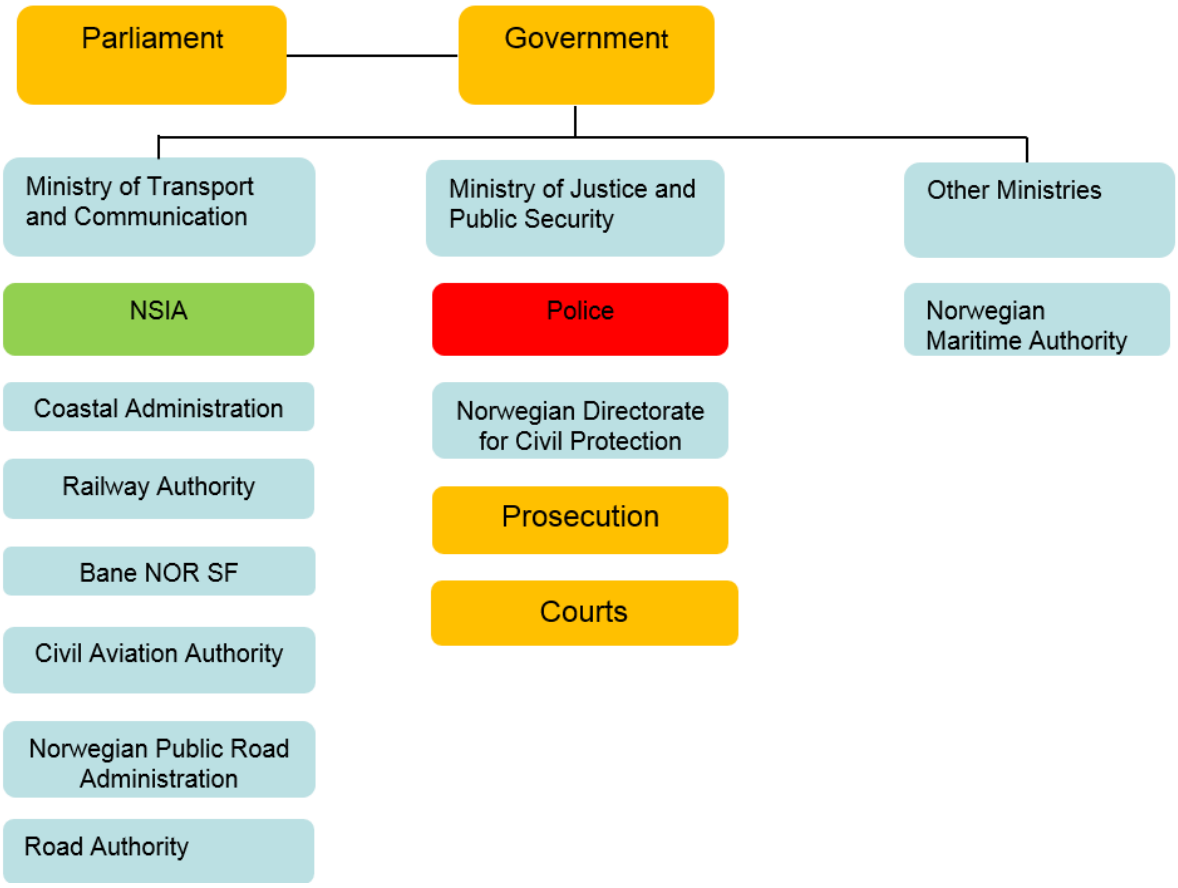

Figure 1: NSIA and other national bodies.

Relationship between the NSIA and the railway sector:

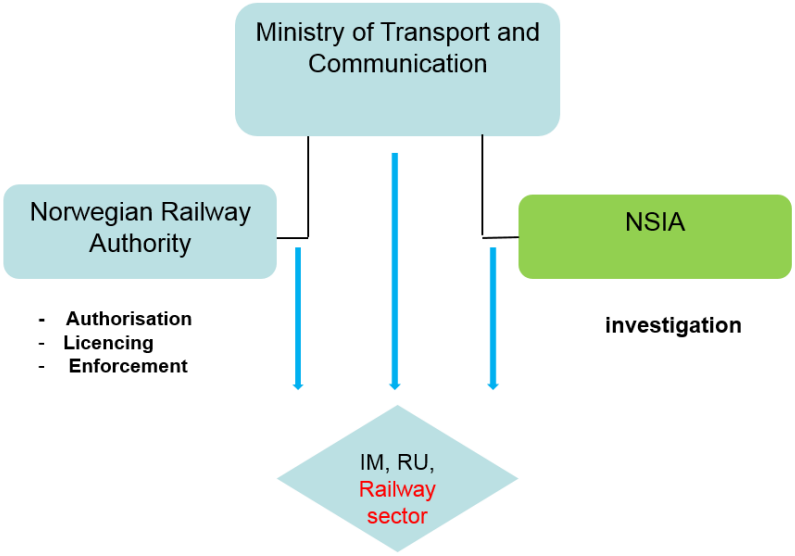

Figure 2: NSIA and the rail sector.

Norwegian Safety Investigation Authority (NSIA) – Organisation

The NSIA organisation as of 31st December 2020:

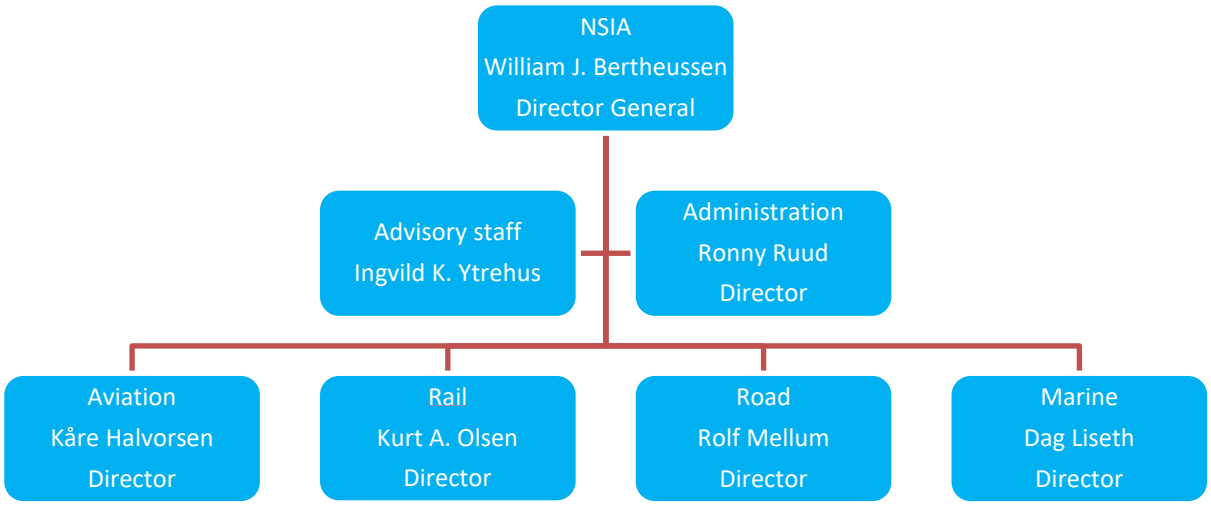

Figure 3: The NSIA organigram.

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

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

The NSIA railway investigators 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 serious incidents – key numbers

The NSIA, Rail department received 215 notifications by telephone in 2020. The number of notifications includes rail-, metro- and tram traffic including 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.

32 accidents were registered. Trespasses and suicides are included.

The NSIA started six accident or serious incident safety investigations in 2020.

The NSIA, Rail department had seven open safety investigations as of 31st December 2020.

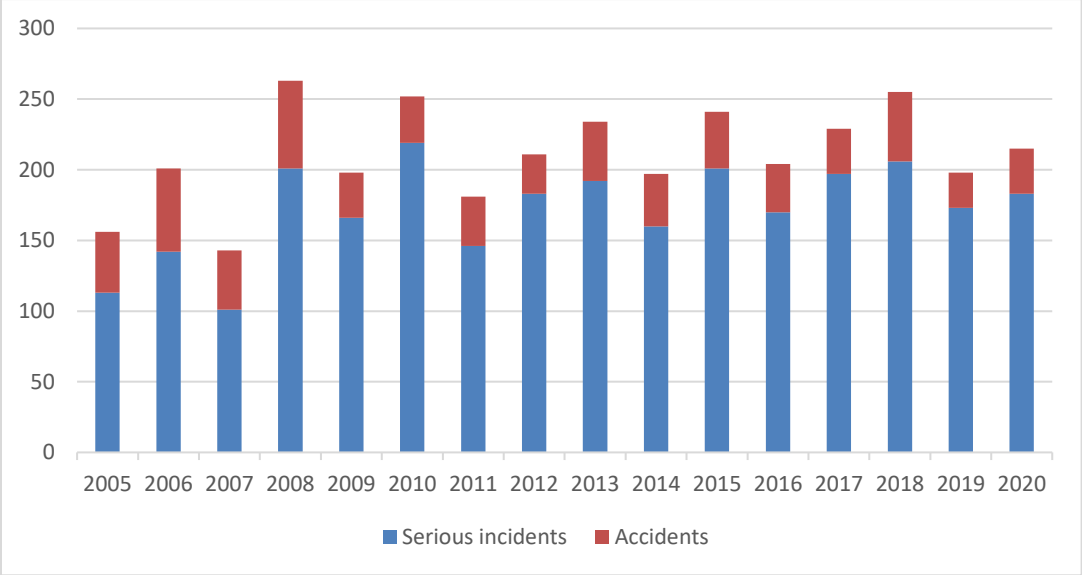

Figure 4: Key numbers, notified railway accidents and serious incidents.

	2010	2011	2012	2013	2014	2015	2016	2017	2018	2019	2020
Serious railway incidents	219	146	183	192	160	205	170	197	206	173	183
Railway accidents	33	35	28	42	37	40	34	32	49	25	32
Total	252	181	211	234	197	245	204	229	255	198	215
Published reports	**9**	**10**	**9**	**9**	**7**	**9**	**7**	**8**	**11**	**10**	**9**

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

Other activities

During 2020, several meetings have been arranged with the Norwegian Railway Authority, IMs 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.

During the closing process of a safety recommendation, a meeting is organised between NSA and NSIA to verify that the recipient has understood the content of the safety recommendation, if a closing proposal meets our expectations etc. This feedback on the closing process is considered to be very valuable for the NSIA for the improvement of future safety recommendations.

Norway, Sweden, Denmark, Finland, Estonia, UK and Ireland are members of the Nordic Network of Accident Investigation Bodies (NRAI). The network organises one meeting per year, where the main objective is to inform each other about safety investigations in progress, safety learning, European Union Agency for Railways (ERA) network and task force meetings and any other business common to the Nordic Region. ERA participates in the NRAI meetings. The 2020 meeting was cancelled due to the Covid-19 pandemic.

The NSIA is heavily involved in the common Peer Review programme and review criteria where all investigating bodies are encouraged to participate to monitor their effectiveness and independence. The 2020 peer review programme included NIB Croatia where NSIA was the lead. The 2020 programme was postponed until 2021 due to the Covid-19 pandemic.

Investigation reports

The Norwegian Safety Investigation Authority, Rail department, published nine investigation reports within 12 months after the date of the occurrence. This gives approximately two reports pr. year for each Investigator. See appendix A for details.

Key elements of the report (roadmap):
The NSIA investigation reports include the following key elements:

- Notification of the accident
- Summary (in Norwegian and English language)
- Factual information
- Investigations carried out
- Analysis
- Conclusion
- Planned and implemented measures
- Safety recommendations (in Norwegian and English language)
- References
- Appendices

Safety recommendations

The Norwegian Safety Investigation Authority, Rail department, published 11 safety recommendations in 2020. An overview of the recommendations, see appendix B.

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

Year:	**2012**	**2013**	**2014**	**2015**	**2016**	**2017**	**2018**	**2019**	**2020**
Open:	0	0	0	0	0	0	0	6	8
Closed:	9	6	9	9	8	8	17	2	3
Total:	**9**	**6**	**9**	**9**	**8**	**8**	**17**	**8**	**11**

Table 2: Number of safety recommendations.

The NSIA receives a report from the Ministry of Transport, after written input from the NSA, twice per year regarding status of the safety recommendations. The second report on status of the 2020 recommendations has not been received at the time when preparing this annual report.

Norwegian Safety Investigation Authority

Lillestrøm, September 30, 2021

Appendix A – Published reports 2020

See link: https://havarikommisjonen.no/Rail/Published-reports

No:	Identification:	Date of occurrence:	Report published:
1	On 16 January 2019, the driver of a light locomotive experienced brake force failure while approaching Roa station along a section of track with a steep downward gradient. As a result of the failure, the locomotive passed a stop signal at main approach signal D672 at Roa station at a speed of approx. 75 km/h. The brakes only started to take effect after the locomotive had entered the station area, and it came to a stop just before main departure signal M674 after having passed out of control through the station area. The AIBN believes that the incident occurred as a result of the locomotive's snow brake function, the purpose of which is to clear snow and ice from the brakes during the journey, being set at too low a frequency. The snowy weather on the day of the incident, in combination with the fact that manual braking was neither needed nor used on this stretch, probably contributed to a layer of ice gradually forming between the brake pads and the brake discs. This resulted in minimal friction when the train driver started braking. After the driver had applied the emergency brake, the locomotive travelled nearly two kilometres before stopping. Winter problems related to rolling stock with disc brakes, and the importance of manual braking to prevent ice from building up, are well known in the industry and covered in the train drivers' training. In the AIBN's opinion, many drivers will trust the snow brake feature to prevent the build-up of ice, and it is therefore vital that it functions as intended. At the same time, the presence of such a brake feature cannot replace the need to check brake effect during a journey, particularly in unfavourable snow conditions. In the AIBN's opinion, this incident shows that a great responsibility for ensuring that the functions of rolling stock are appropriately set rests with the user. The Accident Investigation Board Norway therefore submits a safety recommendation concerning this issue to all railway undertakings that use rolling stock	16.01.2019	13.01.2020

	with some form of snow brake function controlled by a time mechanism.		
2	At 16.30 on Sunday 24 February 2019, one person died after coming into contact with the overhead contact line system inside Filipstad train formation yard. Two other persons present were also exposed to electricity and were critically injured in the accident. The Accident Investigation Board Norway (AIBN) proposes two safety recommendations based on this investigation. They concern reviewing and ensuring correct securing and signposting of train formation yards, and conducting assessments of the risk of third-party climbing for different types of rolling stock with regard to parking and the need for inspection. Three adolescents had made their way into the track area and into a culvert in the area called 'Strupen', where two train sets were parked. The adolescents climbed onto the roof of one of the train sets, and moved in a way that caused one of them to come into contact with the overhead contact line. The investigation of how the area was secured that was conducted after the accident showed that there was a section of fence near Ruseløkka, measuring approximately 30 metres, that was not in accordance with Bane NOR SF's technical regulations. There was a hole in the fence near the wall of Munkedamsbroen bridge, and the existing fence was 106 cm at its lowest point. The required height is 180 cm. There were no 'Adgang forbudt' ('No trespassing') signs in the area from Strupen along Ruseløkka youth club. The investigation showed that the parked train sets and the culvert had been left unattended for a long period, and had been frequented by unauthorised persons.	24.02.2019	21.01.2020
3	At 1240 on Sunday 17 March 2019, both the inner and outer panes of glass were smashed in one window, and 11 others were damaged in one of the carriages in train 61 while this was inside the Finsetunnel. Lumps of ice threw up gravel and ice, which rebounded off the tunnel wall onto the side of the train. At 14:50 on Tuesday 26 March 2019, train 62 was struck by an icefall at milepost 157.950 by Østre Gaptjern Tunnel between Bergheim and Flå on the Bergen Line. The icefall struck the second-last carriage of the train. Both the inner and outer panes of glass were smashed	17.03.2019	16.03.2020

	in two windows, and the broken glass sprayed into the carriage. Three people sustained minor injuries in this incident. The passenger carriages in both incidents were of the B7 type. The windows in these carriages are made from double-layer toughened safety glass and meet the applicable European requirements set out in UIC 564-1. On account of the two incidents, the AIBN believes that an assessment should be made of whether the glass is sufficiently strong for Norwegian conditions. None of the windows in the type 7 carriages are defined as primary escape exits. However, safety hammers have been installed to break the side windows in the event of the primary escape routes becoming inaccessible. Norske Tog AS, the owner of the carriages, is of the opinion that it is not advisable to deviate from the current standard of the panes of glass. From their point of view, the risk contribution does not justify special Norwegian requirements, in addition to the specifications used today.		
4	At 17:40 on 25 July 2019, seven wagons on CargoNet AS's freight train 5790 derailed at milepost 303.3 between Majavatn and Namsskogan on the Nordlandsbanen line. The train was en route from Bodø to Trondheim. The derailment was due to buckling that is related to earlier work on the track. Two of the wagons overturned and were left lying on the slope, while one wagon and a container ended up in the Namsen river. One container on the train contained dangerous goods in the form of different types of gas cylinders. With the exception of ammonia, the container only contained non-toxic gases. Emissions of some of these gases to the air would not have been environmentally harmful or toxic, but it would have entailed a risk of explosion. The AIBN has previously carried out four investigations into derailments related to buckling. Incorrect neutral temperature and failure to control the position of the track have been common factors in these incidents. The actions taken by Bane NOR SF have concerned competence raising, more stringent control procedures, better maintenance management	25.07.2019	29.04.2020

	and greater control of the position of the track. Several of the actions are also deemed to be relevant to this accident, which gives cause to conclude that there is still a need to address the problem of buckling and prior work on tracks.		
5	On Wednesday 8 May 2019, a locomotive derailed on points at Oslo Central Station. The locomotive was reversing a shunting unit consisting of seven wagons into track 19, when it ran over a buffer and was lifted off the rails. The buffer fell off when two passenger carriages became buffer-locked in an S-curve a few hundred metres before the derailment. The derailment caused extensive material damage, environmental emissions and several days of reduced access to tracks in the station. The Accident Investigation Board Norway (AIBN) believes that the derailment was caused by a track fault in the S-curve where two of the carriages became buffer-locked prior to the derailment. The track fault arose after track work carried out in summer 2018, and shortcomings in this work led to weaknesses that made the track unstable. After the derailment, Bane NOR SF did not discover the fault in the S-curve where the carriages became buffer-locked. It was not discovered until the AIBN performed on-track testing on 12 June 2019. Bane NOR SF lacked control mechanisms for uncovering the fault that arose in the S-curve. The AIBN later learned that the same carriage had become buffer-locked en route from Lodalen to Oslo S in September 2018. That incident did not cause a derailment. Bane NOR SF had neither registered nor followed up the incident.	08.05.2019	04.05.2020
6	On Wednesday 31 July 2019, passenger trains 1860 and 1859 were to cross each other at Berekvam station on the Flåm Line. Train 1859 was heading down towards Flåm and should, pursuant to the ordinary procedure, be directed to track 1 at Berekvam. Train 1860 had already arrived and was stationary in track 2. By mistake point 1 was set to track 2, where train 1860 was already stationary, resulting in a collision between the two trains. Four passengers and one crew member sustained minor injuries in the accident. The station has a sigle-entry signal and is staffed by a local traffic controller from Bane NOR SF. On the Flåm Line, the local traffic controller's responsibilities	31.07.2019	10.06.2020

	are to send and receive manual announcements, set signals and operate the points. There are no technical barriers in the safety system of stations with sigle-entry signals and manual announcements capable of preventing such errors. The local traffic controller therefore fills an important barrier function in connection with trains crossing in stations with sigle-entry signals, but this system is vulnerable to human error. The risk of this happening can increase if it is a long time since a person has performed a task, which was the case in this instance.		
7	On Monday 26 August 2019, the driver lost control of a work train at the heritage railway line Setesdalsbanen, and the train rolled on for approx. 3.5 km before derailing at Grovane station. The work train consisted of a Robel track maintenance vehicle and two freight cars. The work train was spraying a pesticide along the track, and was just north of the Kringsjå stop when the driver lost control of the train. The crew comprised the driver and another person, who were applying pesticide along the track as volunteer work. The other person was following behind the train with a hand-held sprayer, and the driver was in the track maintenance vehicle. The vehicle was 'locked' at low speed so that the driver could leave the driver's cab at regular intervals to check the nozzles on the spray car. During one of these inspections, the sliding door to the driver's cab closed and the driver was locked out. There was no handle on the door, and the driver tried to open the door using tools available on the track maintenance vehicle. While he was doing this, the vehicle's gear shifted to the neutral position, and the train started to pick up speed rapidly. Most of the section of track from Kringsjå to Grovane is downhill, and the driver therefore chose to jump off the train at the Kringsjå stop. The driver suffered bruising, but no severe injuries. The train did not derail, but continued down to Grovane station and came to a stop in the gravel at the end of the track. The work train sustained minor damage.	24.08.2019	10.08.2020
8	On Wednesday 25 September 2019, a locomotive travelling as part of a train derailed at Bryn station. The locomotive was enroute from Sundland to Hamar to undergo maintenance. At Bryn station there was a	25.09.2019	27.08.2020

	height misalignment in the track, which Bane NOR SF was aware of. Repairs of the fault had been planned, but the contractor found the ballast to be of too poor quality to be packed. In addition to the height misalignment, the rail head was worn. The Norwegian Safety Investigation Authority (NSIA) have found several factors that contributed to the derailment to varying degrees. The NSIA submits one safety recommendation to Bane NOR SF that focuses on following up the maintenance regime so that concurrent track faults are identified. The derailed locomotive had three axles attached to a stiff frame, and the distance between the axles was short. This meant that it had poorer running characteristics than other rolling stock, both for negotiating curves and for handling misalignments and faulty tracks.		
9	On Saturday 7 December 2019, an excavator driver was killed when a freight train collided with an excavator engaged in maintenance work for Bane NOR at Storforshei between Mo i Rana and Ørtfjell on the Nordlandsbanen line. The excavator driver was part of a three-person team working on the site before the accident. The NSIA has not found an obvious and decisive causal factor behind the accident, but the investigation has identified several safety issues that may have contributed to the accident. Before the accident, a timetable graph was used to plan the final track possession for the day. The train operations in the area where the work took place differ between weekdays and Saturdays. The principal site safety supervisor (PSSS) used the timetable graph for the day before, and the team's impression of the train operations that were to be carried out before they could resume work on the track was formed on that basis. The timetable graph is not intended as a tool for detailed planning of track possessions. In order to grant access and track possession for this type of work, Bane NOR SF must issue an announcement of the concrete work to be carried out. Local traffic controllers may not grant access to the tracks without such an announcement. According to Bane NOR SF's instructions, principal site safety supervisors have an oversight function in that they are to ensure that the track is clear when a train is about to pass and that work teams are notified	07.12.2019	30.11.2020

	a train is approaching. The principal site safety supervisor left the work area to prepare for the track possession. A cutting in the area where the principal site safety supervisor was located caused him to lose view of the work site. It was therefore not possible for him to intervene at an earlier stage when the excavator entered the tracks or notify the team that a train was about to pass the work site. The NSIA has also uncovered failure to use safe job analysis as a tool to manage residual risk that remains after previous risk assessments and SJAs. This finding has also been made in connection with previous investigations.		

Appendix B – Safety recommendations

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: https://havarikommisjonen.no/Rail/Published-reports

Report No.	Rec. No.	Safety recommendation:	Ministry of Transport Status report.	Status:
2020/01	01	On 16 January 2019, a light locomotive passed a stop signal at main approach signal D672 at Roa station when the driver did not get the expected braking effect. It was snowing, and the driver had therefore activated the locomotive's snow brake feature. Its effect was not sufficient to prevent the build-up of snow and ice between the brake pads and brake discs. The Accident Investigation Board Norway requests that the Norwegian Railway Authority ensure that all railway undertakings make sure that vehicles equipped with a snow brake feature have appropriate settings adapted to the undertaking's activities.	The enterprises described the situation for their activities with regard to the safety recommendation. Several enterprises explained that they were familiar with the risk snow and ice pose to braking power, and that they already had internal regulations to mitigate this risk. All the reports have been taken into consideration. They have also been submitted to the Accident Investigation Board Norway for comment and input.	Closed
2020/02	02	On Sunday 24 February 2019, one young person died and two were seriously injured when they climbed onto a parked train set at Filipstad train formation yard. The risk of third-party climbing was deemed to be low for this type of rolling stock, and it was therefore not covered by Bane NOR's requirement for regular inspection.	Bane NOR performed an overall risk assessment that was completed in March 2019. The assessment was linked to the parking of vehicles under live contact lines. This work concluded that electrical safety was addressed through a combination of area security and vehicle security with respect to the risk of third-party climbing for each type of rolling stock. In that connection, Bane NOR prepared a standard (template) for risk assessments of specific types of	Closed

		The Accident Investigation Board Norway recommends that the Norwegian Railway Authority requests Bane NOR SF together with the owners of rolling stock to conduct assessments of the risk of third-party climbing for different types of rolling stock with regard to parking and the need for inspection.	rolling stock with respect to such climbing. This standard was used to perform a risk assessment of 69 D/G/H, which led to this type of train being re-categorised as 'inadequate', meaning that it is too easy to climb. Corresponding risk assessments, based on the standard, were also performed for six other types of rolling stock. One (Di8) of them was categorised as 'inadequate' following the risk assessment. Bane NOR has performed risk assessments for a total of seven types of rolling stock. Bane NOR is of the opinion that it may be expedient, as prescribed in the safety recommendation, to involve the owners of the rolling stock in these risk assessments. Bane NOR must therefore send the risk assessments for the seven types of rolling stock to their owners with a deadline for comment of 30 April 2020. Risk assessments of a further two types of rolling stock are planned. They must be completed by the end of May 2020. Bane NOR must introduce a principle in its Technical Regulations by 1 May 2020 that all rolling stock be defined as 'inadequate' (too high risk of third-part climbing) until a risk assessment is performed that concludes otherwise. Electrical safety must be improved for all types of rolling stock that it is too easy for third parties to climb in existing areas, primarily by extending fences to a height of 2.5 metres, topped with barbed wired, as set out in the strategy. In specific cases, where reinforced area security is only due to a few types of rolling stock, it may also be relevant to enter into dialogue with the rolling stock owner to consider possible modification of the features that have led the vehicle to be assigned to the	

			lowest category. A final option may be to prepare a new, local risk assessment to see whether there are any other contributions or measures that could be implemented more easily for a short period of time, for example given that tp69 is soon to be phased out of operation on the section.	
2020/02	03	On Sunday 24 February 2019, a young person died after suffering an electric shock at Filipstad train formation yard. Two other adolescents were seriously injured in the accident. Parts of the fencing in the area did not satisfy Bane NOR's internal requirements. In addition, there were no 'Adgang forbudt' ('No trespassing') signs on this part of the fence. The Accident Investigation Board Norway recommends that the Norwegian Railway Authority requests Bane NOR SF to review and ensure correct securing and signposting of all train formation yards.	Bane NOR SF was ordered to explain how the above safety recommendations were to be followed up. Bane NOR has updated its Technical Regulations with new area security requirements, in accordance with the risk assessment dated 30 September 2019 in relation to parking areas and train formation yards. Work is under way on mapping parking areas and train formation yards to identify gaps between the new and old requirements. The mapping must be completed by 15 May 2020. The deadline for rectifying registered nonconformities after the mapping has been set to 24 September 2020. The results of the risk assessment for each type of rolling stock will be/are used as input in determining what kind of area security is necessary. There will always be a fence of at least 1.8 metres surrounding defined parking areas and regulated access through a gate as well as a warning sign (the technical provisions have made this an internal requirement for many years). If types of rolling stock are to be parked there that are considered to have inadequate vehicle security, the fence must be at least 2.5 metres and be topped with barbed wire. There will be a fence some distance out from the area along the track, but there will not be a fence/gate across the track. Bane NOR's risk assessments indicate that guards are unnecessary.	Closed

			Prior to concluding our processing, the answers from Bane NOR were presented to the Accident Investigation Board Norway for comment and input.	
2020/03	04	On Sunday 17 and Tuesday 26 March 2019, several windows in B7 carriages were smashed by ice and gravel. Three persons sustained cuts in connection with the latter incident. The windows are made up of an outer layer of toughened glass and an inner layer of laminated glass. In instances where both the outer and inner panes smash, the laminated glass should remain in the window frame and prevent the toughened glass from entering the passenger compartment. The Accident Investigation Board Norway recommends that the Norwegian Railway Directorate advise Norske Tog AS to assess whether the windows in Norwegian passenger carriages are sufficiently strong.	The processing of the safety recommendation is in progress.	Open
2020/04	05	On Thursday 25 July 2019, CargoNet AS's goods train 5790 derailed at milepost 303.3 between Majavatn and Namsskogan on the Nordlandsbanen line. The derailment was due to buckling that is related to earlier work on the track. The AIBN has conducted several investigations into derailments of this type. Several of the actions taken by Bane NOR SF after these investigations are deemed to also be relevant to this accident. It is therefore	The processing of the safety recommendation is in progress.	Open

		necessary to again address the problem of buckling and prior work on tracks. The Accident Investigation Board Norway recommends that, in order to identify areas for improvement, the Norwegian Railway Authority order Bane NOR SF to review and evaluate previously implemented measures.		
2020/05	06	On Wednesday 8 May 2019, the locomotive of shunting unit 39052 derailed at Oslo Central Station. The derailment was due to a track fault in an S-curve related to earlier work on the track. Bane NOR SF lacks relevant control procedures that over time are capable of identifying this type of track fault. Nor did Bane NOR SF's follow-up inspection identify the track fault before the track was reopened after the derailment. The Accident Investigation Board Norway recommends that the Norwegian Railway Authority request Bane NOR SF to ensure that it has adapted procedures in place for inspections following track work and accidents.	The processing of the safety recommendation is in progress.	Open
2020/06	07	On Wednesday 31 July 2019, at approximately 14.00, train 1859 collided with train 1860, which was stationary in track 2 at Berekvam station. The station traffic control routines consist of a series of tasks that need to be done in the correct order, where human errors may lead to accidents. The Accident Investigation Board Norway recommends	The processing of the safety recommendation is in progress.	Open

		that the Norwegian Railway Authority request Bane NOR SF to risk assess local practices at stations with single-entry signals with the goal of reducing the possibility of human error.		
2020/06	08	On Wednesday 31 July 2019, at approximately 14.00 , train 1859 collided with train 1860, which was stationary in track 2 at Berekvam station. The station has a single-entry signal, and in this accident, a point was by mistake set to the wrong track. The speed limit at the station was 30 km/h, but it was not sufficiently low to avoid collision.	The processing of the safety recommendation is in progress.	Open
2020/08	09	On Wednesday 25 September 2019, a locomotive travelling as part of a train derailed at Bryn station on the Hovedbanen line. The train derailed in a curve due to a track fault that had developed over time. The track fault consisted of both height misalignment and warping, neither of which Bane NOR SF considered to be critical when looked upon separately. The Norwegian Safety Investigation Authority recommends that the Norwegian Railway Authority request Bane NOR SF to ensure that the maintenance system addresses concurrent track faults.	The processing of the safety recommendation is in progress.	Open
2020/09	10	On Saturday 7 December 2019, a person was killed when a freight train collided with the excavator he was sitting in. The person was employed by a contractor carrying out maintenance work for Bane NOR SF at	The processing of the safety recommendation is in progress.	Open

		Storforshei on the Nordlandsbanen line. The work was carried out through track possession between ordinary train operations. The work team used the timetable graph to plan their work as a supplement to the announcement. The Norwegian Safety Investigation Authority recommends that the Norwegian Railway Authority request Bane NOR SF to map whether an unfortunate practice of using alternative sources of information to plan work on tracks has developed.		
2020/09	11	On Saturday 7 December 2019, a person was killed when a freight train collided with the excavator he was sitting in. The person was employed by a contractor carrying out maintenance work for Bane NOR SF at Storforshei on the Nordlandsbanen line. The work was carried out through track possession between ordinary train operations. A permission to work on tracks is communicated verbally. The Norwegian Safety Investigation Authority recommends that the Norwegian Railway Authority request Bane NOR SF to look into possible measures to make work teams aware of track possession.	The processing of the safety recommendation is in progress.	Open

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.