



**Havarikommissionen**

Accident Investigation Board Denmark

**Annual Report 2013**  
Railways

October 2014

Contents

1. Foreword.....	3
2. The Accident Investigation Board .....	4
2.1. Mission and vision.....	4
2.2. Organisation of the Accident Investigation Board .....	5
3. The year's investigation activities .....	5
3.1. The aviation sector (pending).....	5
3.2. The railways sector.....	5
3.3. Summary of cases in 2013.....	6
4. Recommendations.....	7
4.1. Railways .....	7
5. Statistics of reported incidents.....	8
6. Annexes .....	9
Annex 1 .....	10
Status of recommendations in the railways sector.....	10
Annex 2 .....	14
Statistics for the railways sector .....	14

## 1. FOREWORD

The Accident Investigation Board for Civil Aviation and Railways (the Accident Investigation Board, AIB) is an independent institution under the Ministry of Transport. Its main task is to investigate accidents and incidents in the aviation and railways sectors in Denmark, and in the aviation sector in Greenland and the Faroe Islands.

The Accident Investigation Board's investigations are not concerned with attributing guilt or responsibility, but are aimed solely at improving railway safety and preventing incidents and accidents in the future.

Through this annual report, the Accident Investigation Board wishes to

- provide information on the year's investigation activities within the Accident Investigation Board;
- report on the implementation status of recommendations made by the Accident Investigation Board; and
- provide statistical information concerning the accidents and incidents investigated by the Accident Investigation Board.

The annual report contains general information about investigation activities, not detailed information about individual investigations. Reports and statements concerning individual accidents and incidents can be found on the Accident Investigation Board's website ([www.aib.dk](http://www.aib.dk)).

Chapter 2 contains a brief introduction to the Accident Investigation Board.

Chapter 3 provides an overview of the Accident Investigation Board's investigation activities in 2013. This is done on the basis of figures for received and closed cases, which give a highly simplified picture, since the investigations vary considerably in scope and form.

Chapter 4 presents an overview of the implementation status of the recommendations made by the Accident Investigation Board, which can be studied in greater depth in Annex 2.

Chapter 5 presents the statistical figures which can be found in Annex 4.

## 2. THE ACCIDENT INVESTIGATION BOARD

The Accident Investigation Board for Civil Aviation and Railways (the Accident Investigation Board) is an independent institution under the Ministry of Transport. The Board's duties to investigate aviation and railway matters are laid down in the Aviation Act (Consolidating Regulation No 959 of 12 September 2011) and the Railways Act (Consolidating Regulation No 1249 of 11 November 2010).

The main task of the Accident Investigation Board is to investigate accidents and incidents in the aviation sector in Denmark, Greenland and the Faroe Islands and accidents and incidents in the railways sector in Denmark. Where Danish passengers or Danish-registered aircraft or trains are involved, the Accident Investigation Board can take part in investigations carried out by another country's investigation authorities.

The Accident Investigation Board's investigations are not concerned with attributing guilt or responsibility, but are aimed solely at preventing incidents and accidents in the future.

### 2.1. Mission and vision

The Accident Investigation Board's mission is as follows:

#### **The mission of the Accident Investigation Board**

The Accident Investigation Board should, through independent investigations, make recommendations to prevent accidents and incidents in rail and aviation.

The role and duty expressed in the mission statement are fundamental to the functioning of the Accident Investigation Board, and, as a supplement to the mission statement, the Accident Investigation Board's vision serves as a guide for its activities.

#### **The vision of the Accident Investigation Board**

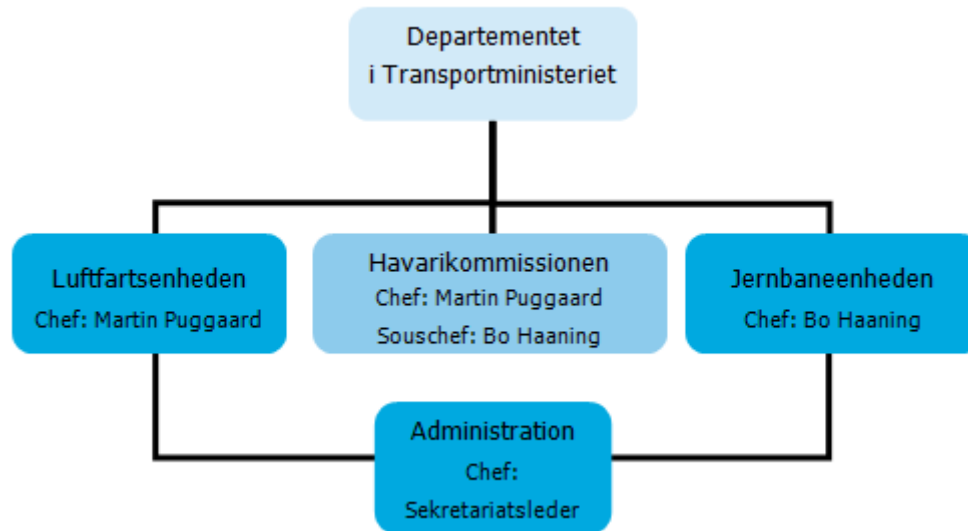
The Accident Investigation Board will develop and continue to:

- deliver an investigation result of a high professional nature within a time frame which means that the result will be of decisive significance for the prevention of similar cases.
- ensure that our role is objective and unbiased, and that our integrity is never in doubt.
- make our Board attractive – both as a place to work and as part of a larger context

## 2.2. Organisation of the Accident Investigation Board

In 2011 the Accident Investigation Board underwent an organisational change, as reflected in the diagram below.

The organisation of the Accident Investigation Board includes investigation units for both aviation and railways, as well as a director and secretariat.



Departementet i Transportministeriet	Department in the Ministry of Transport
Luftfartsenheden	Aviation Unit
Chef:	Director:
Souschef:	Assistant Director:
Havarikommissionen	Accident Investigation Board
Jernbaneanheden	Railways Unit
Administration	Administration
Sekretariatsleder	Head of Secretariat

The Accident Investigation Board normally has a total of 14 staff, broken down into three employees in the Secretariat, four in the Railways Unit and seven in the Aviation Unit. The Director of the Aviation Unit is also the Director of the Accident Investigation Board, and the Director of the Railways Unit is the Assistant Director of the Accident Investigation Board.

## 3. THE YEAR'S INVESTIGATION ACTIVITIES

### 3.1. The aviation sector (pending)

### 3.2. The railways sector

In 2013, the Accident Investigation Board received 398 reports of accidents and incidents in the railways sector, compared with 496 in 2012.

After initial assessment, it was decided not to carry out an investigation for 384 of the reports. For the remaining reports in question, a preliminary or full investigation was carried out.

If the results of a preliminary investigation do not indicate that an investigation will lead to results of significance for safety, the preliminary investigation is closed and a brief statement produced – known as a § 21q statement – which provides a brief description of the accident or incident, where applicable supplemented by the assessment of the Accident Investigation Board.

### 3.3. Summary of cases in 2013

The table below provides an overview of opened and closed cases in 2013.

The table first gives the total number of reports received. Some reports are closed following preliminary assessment, while others (referred to in the table as ‘Opened in 2013 after preliminary assessment’) give rise to a preliminary investigation.

The number of cases remaining after preliminary assessment is then divided into accidents and incidents.

The cases closed in 2013 are split according to whether or not they were closed within one year of the incident, in line with the common European objective to close cases within one year wherever possible.

Finally, the table gives the number of unfinished cases at the beginning and end of 2013.

Accident Investigation Board		
		Railways
Cases opened in 2013		
Number of reports		398
Closed after preliminary assessment		384
Opened in 2013 after preliminary assessment		14
Reported accidents		11
Reported incidents		99
Cases closed in 2013		
Published statements and reports < 12 months		11
Published statements and reports > 12 months		2
Note: Statements and reports included simplified statements (§ 21Q cases)		
Unfinished cases		
Unfinished cases as at 31/12-2013		14
Unfinished cases as at 31/12-2012		27

## 4. RECOMMENDATIONS

As a result of the investigations carried out, the Accident Investigation Board can make recommendations intended to prevent future accidents. As an independent investigation body, the Board makes recommendations to the relevant safety authorities, whose task is to determine the necessary measures in conjunction with the organisations concerned and which are authorised to implement measures in the sectors. The railways sector is gradually being developed along more common European lines, but still has a primarily national focus, and the recommendations are therefore made to the Danish Transport Authority, which is the national safety authority.

### 4.1. Railways

The table below summarises the status of recommendations in the railways sector.

Recommendations published		Implementation status of recommendations			
		Carried out/ Closed		Open	
Year	Total		%		%
2004-2007	40	40	100	0	0
2008	20	19	95	1	5
2009	9	9	100	0	0
2010	4	4	100	0	0
2011	0	0	0	0	0
2012	8	8	100	0	0
2013	4	0	0	4	100
Total	85	80		5	

For the railways sector, the 2012 annual report contained 2 open recommendations, and in 2013 the Accident Investigation Board made a total of 4 recommendations. Of those 6 recommendations, a total of 2 were implemented or closed in 2013, so that there are now 4 open recommendations.

An overview of all open recommendations and recommendations implemented or closed in 2012 in the railways sector can be found in Annex 1.

## **5. STATISTICS OF REPORTED INCIDENTS**

In the railways sector, a common European database (ERAIL) – corresponding to the one for aviation – is currently being developed. When ERAIL is implemented, it is expected that a series of standardised parameters will be defined in the longer term and thereafter systematically recorded, which will make more ample statistical information easily accessible.

The statistical overviews for the railways sector (see Annex 4) are limited to dividing accidents and incidents into level of seriousness, i.e. serious accident, accident or incident and dividing accidents/incidents into the categories derailment, fire/smoke formation, collision, level crossing accident, collision with person, signal passed at danger (SPAD) and other.

The statistical overviews for the railways sector can best be read together with the Danish Transport Authority's annual safety report ('Safety report for the railways 2012'), which is based on annual reports from operators and infrastructure managers in Denmark. These reports also include those accidents and incidents that have not been investigated by the Accident Investigation Board. They describe the evolution of accidents over the years and the accidents can be seen in relation to the amount of transport on the railways (millions of train-kilometres).



## **6. ANNEXES**

1. Overview of recommendations for the railways sector
2. Statistics for the railways sector

## Annex 1

### Status of recommendations in the railways sector

*Explanation of the terminology used by the Accident Investigation Board:*

**Open:** All cases where it has not yet been decided whether to implement a measure, or where implementation has been started but not completed.

**Carried out:** All cases where, on the basis of the Danish Transport Authority's feedback on 'compliance', a recommendation is deemed essentially to have been fulfilled.

**Closed:** Cases where the recommendation has not been directly followed, but where initiatives have been implemented and the Danish Transport Authority as safety authority has assessed the initiatives as satisfactory, and will not take any further action.

**Rejected:** the Danish Transport Authority or other authority to which the recommendation was made has refused to take any action.

**2004-2007:** In total 40 published, of which none is open.

#### Published 2008

Derailment near Ellebjerg on blocked track on 18.07.2007	
Three sleeper transport wagons were derailed while shunting on blocked track near the old Ellebjerg station on the S-track to Køge. The track (left track Copenhagen H – Åmarken) was being reconditioned.	
<b>R2 17.07.2008</b>	Open
The Danish Transport Authority should ensure compliance with the requirements on the training of personnel involved in reconditioning track (including subcontractors' personnel), including monitoring the rail safety conditions beyond those relating purely to track reconditioning.	
Response to recommendation: The Danish Transport Authority states that four competence rail standards are being approved on an interim basis by the Danish Transport Authority.	Comments: The Accident Investigation Board is awaiting information on final approval.

#### Published 2009

9 published, none open

#### Published 2010

4 published, none open

#### Published 2011

None open

**Published 2012**

8 published, none open

<b>IC4 unit passed signal at 'stop' at Marslev on 07.11.2011 (Preliminary statement)</b>	
<p>High-speed train 47 passed a signal at Marslev station at high speed, and stopped immediately behind a freight train (G9233) that was stopped at the subsequent entry signal (I-signal). The train stopped 651 m after automatic block signal (AM-signal) 2173 and 542 m after the danger point. High-speed train 47 consisted of an IC4 unit (MG5627).</p> <p>The Accident Investigation Board recommends that the Danish Transport Authority take the following into account</p>	
<b>DK-2012 R 1-3 30.01.2012</b>	Closed
Response to recommendation:	<p>Comments:</p> <p>Closed in connection with publication of final report on 30.08.2013, in which the recommendation was included.</p>

<b>Collision with person on platform crossing at Tølløse station on 13.02.2012</b>	
<p>Train 1528, which was arriving from Tølløse on track 2 from Vipperød, hit a person on the public platform crossing at the northern end of the station. The person concerned died in the collision.</p>	
<b>DK-2012 R 7 13.12 2012</b>	Carried out
<p>The Accident Investigation Board recommends that the Danish Transport Authority assess whether the safety of crossings that are generally used for public traffic other than access to and from trains is satisfactory with the current measures</p>	
Response to recommendation: The Danish Transport Authority has conducted a nationwide survey to identify crossings that are generally used for public traffic other than access to and from trains, and has assessed Banedanmark's proposal for additional safety measures at individual crossings.	Comments:
<b>DK-2012 R 8 13.12.2012</b>	Closed
<p>The Accident Investigation Board recommends that the Danish Transport Authority ensure that Banedanmark has and applies procedures for replacing and checking safety-critical components in signal boxes</p>	
Response to recommendation: The Danish Transport Authority has previously noted that Banedanmark has and applies procedures relating to the replacement of components. Change management is an integral part of overseeing the undertakings' safety management systems, and will therefore be followed up by these. The Danish Transport Authority considers the recommendation to have been complied with.	<p>Comments:</p> <p>The Danish Transport Authority has also indicated that when it considers a recommendation to have been carried out, this also includes its having assessed the existing and any new measures to be completely satisfactory from a safety point of view.</p>

<b>Fire in roof of points stopping machine SSR 532 on 30.03.2012</b>	
<p>While transporting points stopping machine SSR 532 and two personnel carriers from Esbjerg to Roskilde as a work vehicle, the driver of SSR 532 noticed a fire in the roof.</p>	
<b>DK-2012 R 6 16.11.2012</b>	Carried out
<p>The Accident Investigation Board recommends that the Danish Transport Authority assess the authorisation procedures for tunnel travel for work and positioning runs for these types of train, as well as the requirements for fire-fighting equipment</p>	

<p>Response to recommendation:  Banedanmark has explained the rules and procedures in relation to driving through tunnels, and has stated, <i>inter alia</i>, that tunnel check (SIN) only applies to the person driving the train, and that there is a preparation procedure that addresses, among other things, the requirements of fire-fighting equipment (number and type). There are no special requirements (from the infrastructure manager) for the carrying of equipment in tunnels, although there are requirements relating to the carriage of hazardous goods, as well as requirements on tunnel training. Drivers of work vehicles for Banedanmark are not automatically trained in fire-fighting.</p> <p>The Danish Transport Authority has carried out an inspection at Banedanmark in relation to the maintenance of rolling stock. The Danish Transport Authority carries out ongoing inspections at Banedanmark (of the safety management system) in relation to Banedanmark's ensuring that stock is maintained, and that the preparation procedure is implemented.</p> <p>The Danish Transport Authority considers the recommendation to have been complied with.</p>	<p>Comments:  The Danish Transport Authority has also indicated that when it considers a recommendation to have been carried out, this also includes its having assessed the existing and any new measures to be completely satisfactory from a safety point of view.</p>
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<b>Collision with person on platform crossing at Tølløse station on 13.02.2012</b>	
Train 1528, which was arriving from Tølløse on track 2 from Vipperød, hit a person on the public platform crossing at the northern end of the station. The person concerned died in the collision.	
<b>DK-2012 R 7 13.12 2012</b>	Carried out
The Accident Investigation Board recommends that the Danish Transport Authority assess whether the safety of crossings that are generally used for public traffic other than access to and from trains is satisfactory with the current measures	
<p>Response to recommendation:  The Danish Transport Authority has conducted a nationwide survey to identify crossings that are generally used for public traffic other than access to and from trains, and has assessed Banedanmark's proposal for additional safety measures at individual crossings.</p>	Comments:
<b>DK-2012 R 8 13.12.2012</b>	Closed
The Accident Investigation Board recommends that the Danish Transport Authority ensure that Banedanmark has and applies procedures for replacing and checking safety-critical components in signal boxes	
<p>Response to recommendation:  The Danish Transport Authority has previously noted that Banedanmark has and applies procedures relating to the replacement of components. Change management is an integral part of overseeing the undertakings' safety management systems, and will therefore be followed up by these.</p> <p>The Danish Transport Authority considers the recommendation to have been complied with.</p>	<p>Comments:  The Danish Transport Authority has also indicated that when it considers a recommendation to have been carried out, this also includes its having assessed the existing and any new measures to be completely satisfactory from a safety point of view.</p>

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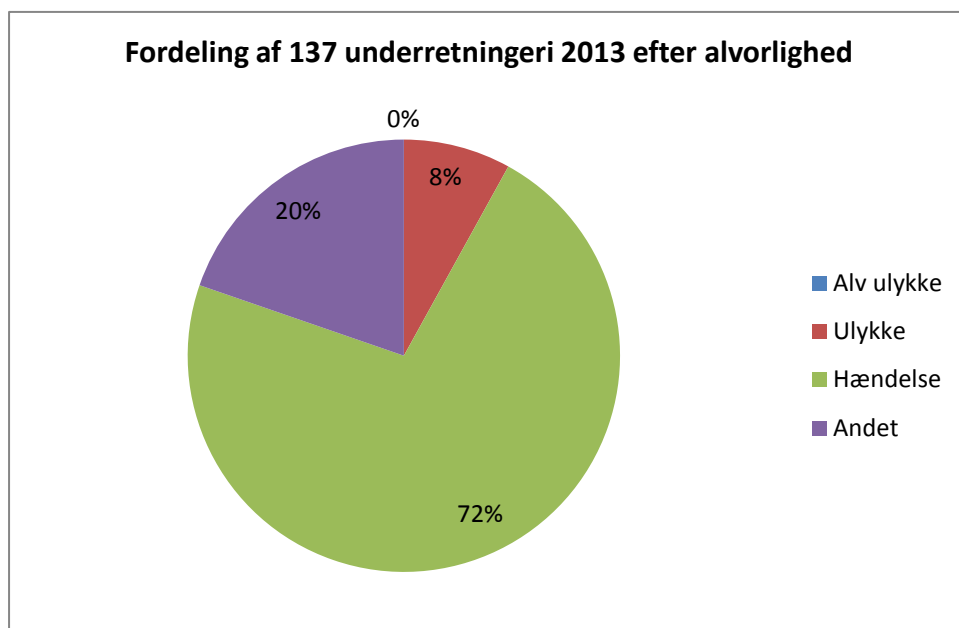
<b>IC4 unit passed signal at 'stop' at Marslev on 07.11.2011</b>	
High-speed train 47 passed a signal at Marslev station at high speed, and stopped immediately behind a freight train (G9233) that was stopped at the subsequent entry signal (I-signal). The train stopped 651 m after automatic block signal (AM-signal) 2173 and 542 m after the danger point. High-speed train 47 consisted of an IC4 unit (MG5627). The Accident Investigation Board recommends that:	
<b>DK-2013 R 1 29.08.2013</b>	Open
ERA will ensure that the applicable international standards for the approval of braking systems for rail equipment are revised so that the braking system's overall functionality is documented within the equipment's overall sphere of application, including in the adhesion conditions that may be expected to occur in daily operation	
Response to recommendation:	Comments:
<b>DK-2013 R 2 29.08.2013</b>	Open
The Danish Transport Authority will ensure that the applicable international standards for the approval of braking systems for rail equipment are revised so that the braking system's overall functionality is documented within the equipment's overall sphere of application, including in the adhesion conditions that may be expected to occur in daily operation	
Response to recommendation:	Comments:
<b>DK-2013 R 3 29.08.2013</b>	Open
The Danish Transport Authority will ensure that the IC4 train type's braking performance is documented within the equipment's overall sphere of application, including in the adhesion conditions that may be expected to occur in daily operation	
Response to recommendation:	Comments:
<b>DK-2013 R 4 29.08.2013</b>	Open
The Danish Transport Authority will ensure that in daily use and under all conditions, the IC4 train type records correct data on the actual distance covered and the actual speed	
Response to recommendation:	Comments:

## Annex 2

### Statistics for the railways sector

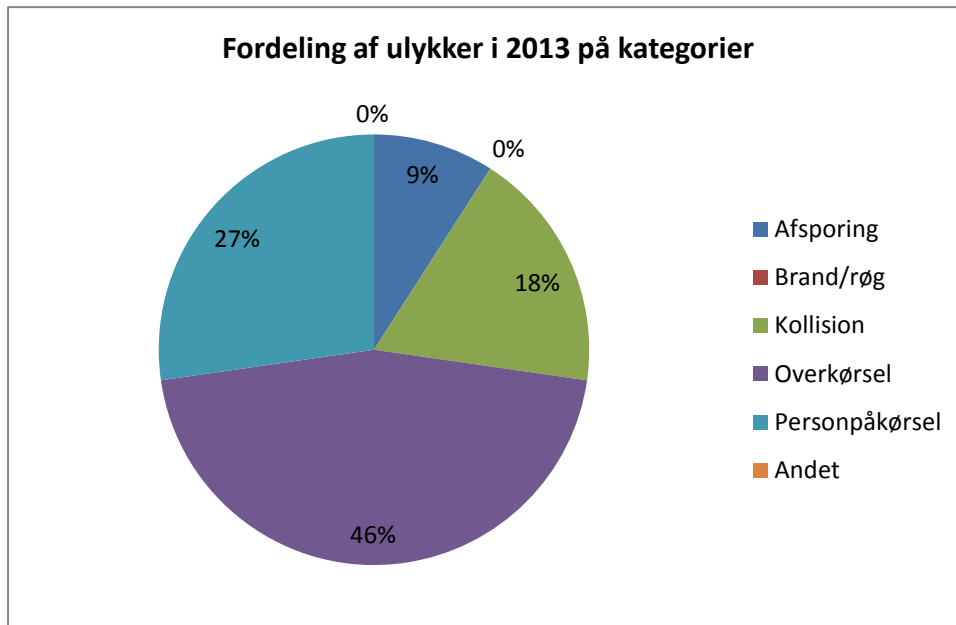
The statistical overviews for the railways sector are currently limited to presenting data from 2013 in relation to

- the breakdown of accidents and incidents by level of seriousness, and
- the breakdown of accidents/incidents by category.



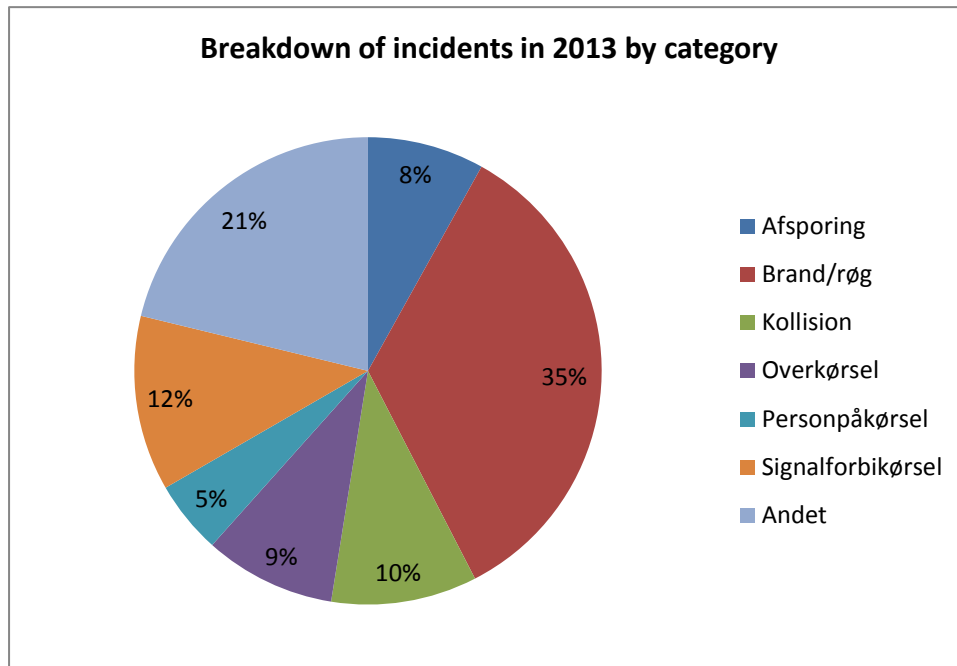
Fordeling af 137 underretninger i 2013 efter alvorlighed	Breakdown of 137 reports in 2013 by seriousness
Alv ulykke	Serious accident
Ulykke	Accident
Hændelse	Incident
Andet	Other

In 2013, 11 accidents were reported to the Accident Investigation Board, and these fell into four categories – derailments, collisions, level-crossing accidents and collisions with persons.



Fordeling af ulykker i 2013 på kategorier	Breakdown of accidents in 2013 by category
Afsporing	Derailment
Brand/røg	Fire/smoke
Kollision	Collision
Overkørsel	Level crossing
Personpåkørsel	Collision with person
Andet	Other

In 2013, 99 incidents were reported to the Accident Investigation Board, and these were spread across all seven categories used by the Accident Investigation Board when recording incidents, with fire/smoke formation as the most represented single category.



Fordeling af hændelser i 2013 på kategorier	Breakdown of incidents in 2013 by category
Afsporing	Derailment
Brand/røg	Fire/smoke
Kollision	Collision
Overkørsel	Level crossing
Personpåkørsel	Collision with person
Signalforbikørsel	Signal passed at danger (SPAD)
Andet	Other