

# Rail occurrence severity ratings

All notifiable accidents and incidents associated with the operation of a rail vehicle, the use of the railway infrastructure or the use of railways premises require a [Rail accident/incident notification form](#) to be submitted to the Transport Agency within three working days.

When submitting the online form, one of the required fields is called 'Severity rating'. This field contains a drop-down menu that gives you the following options:

- 1 – Accident and/or significant incident
- 2 – Incident that placed people/property at risk
- 3 – Incident that could have placed people/property at risk
- 4 – Not sure if notifiable, but notifying in case

## What do these ratings mean?

By allocating each occurrence a severity rating it makes it much easier for users of the occurrence system to get accurate data (provided the ratings are consistent). This is a key aspect of being able to monitor trends and take action when appropriate to improve the safety of the rail industry.

The table below provides the definition of each rating, with severity 1 being an 'accident'.

Severity ratings and descriptions	
1	<ul style="list-style-type: none"> <li>• Any accident that caused a death (to people)</li> <li>• Any accident that caused serious harm to people (requires hospital treatment)</li> <li>• Any accident that caused significant damage to property (estimated more than \$200,000)</li> </ul>
2	<ul style="list-style-type: none"> <li>• Any incident that <b>placed</b> people at risk of death or serious harm</li> <li>• Any incident that <b>placed</b> property at risk of significant damage</li> </ul>
3	<ul style="list-style-type: none"> <li>• Any incident that <b>could have placed</b> people at risk of death or serious harm</li> <li>• Any incident that <b>could have placed</b> property at risk of significant damage</li> </ul>
4	This rating is used for when you are not sure whether you are required to notify us or not.

## Severity rating principles

The idea of an incident placing people or property at risk (or one that could have) should be measured against the following principles:

### Risk

- Occurrence severity is about the risk to people or railway property. A collision with an animal for instance is only relevant to severity in relation to how it put people or property at risk
- Occurrence descriptions need to focus on the risk (eg whether a rail was broken) not the event (eg how someone noticed it may have been broken)
- Carrying passengers increases risk – they are untrained, they don't have PPE, and there are more of them
- An occurrence can lead to consequential risks that increase its severity (eg a derailment in a tunnel or a train hitting a broken barrier arm).

## Consequence

- An accident will always be rated severity 1 (as per the table above)
- An occurrence that causes more than minor damage will be rated severity 2 if the property was placed at risk of significant damage. If the worst possible outcome would still not have seen significant damage caused, then the severity will be 3.
- All persons are of equal value – passengers, workers, public, trespassers.

## Safety system failures

- Severity 2 ratings are typically where there has been a failure of all applicable safety controls and it was lucky that no one was hurt
- Severity 3 ratings are typically where there has been a failure of safety controls, but at least one critical control remained in place (aka failed safe)
- When routine inspections and maintenance pick up faults before they are serious, this is the safety system working and are not notifiable occurrences.

## Ambiguity

- Use precise keywords in the occurrence descriptions to avoid the need for subjective decisions (eg near collision, rail corridor, safety critical, significant damage, serious harm)
- We use a precautionary approach. This means in the absence of evidence that people weren't exposed to the risk, we err on the side of caution and assume that they were
- An "alleged incident" is not an incident. Delay the notification up to 72hrs until it is confirmed or otherwise.

## Why is rating severity important?

A severity rating is a risk-based categorisation of an occurrence, which:

- allows consistent identification of priority events for discussion and escalation (eg investigation)
- communicates to the industry the type of incidents we are particularly concerned about, supporting our efforts to move the industry into risk-based thinking, and
- allows us to track overall levels of safety in the industry, rather than just focus on particular types of incidents and/or simply track the level of reporting.

## Occurrence severity rating examples

For each category of rail occurrence, we have provided examples of the type of occurrence that would be classed as severity 2 and those that would be classed as severity 3. We have also added some examples of occurrences that aren't severe enough for you to notify us of (where appropriate).

Subjectivity will always play a part in these ratings (eg deciding whether it was a near collision or not, estimating the cost of damage), so we've tried to provide numerous examples to help you with accuracy and consistency. Remember, this is not an exhaustive list, and has been provided to help you determine whether an occurrence placed people at risk or could have placed people at risk.

**Note:** The definition of 'near collision' is included on the [Glossary](#) page.

<b>All Categories – Severity 1</b>
<ul style="list-style-type: none"> <li>• Deaths to people</li> <li>• Harm to people that requires hospital treatment, or</li> <li>• Property damage that is estimated to be \$200,000 or more (significant damage)</li> </ul>
<b>Collision – Severity 2</b>
<ul style="list-style-type: none"> <li>• A collision when there were passengers on board</li> <li>• A collision with a person that didn't require hospital treatment</li> <li>• A collision that caused minor or moderate damage and placed the property at risk of significant damage (more than \$200,000)</li> <li>• A collision with an object on track where the object became a hazard (ie endangered people/property as a result)</li> <li>• A projectile that smashes a window when in-service</li> </ul>
<b>Collision – Severity 3</b>
A collision that doesn't meet the severity 1 or 2 criteria
<b>Communications system failure – Severity 2</b>
A failure of a communication system that prevented the transmission of alarms from train monitoring and/or wayside detectors, which placed people or property in imminent danger
<b>Communications system failure – Severity 3</b>
A deficiency of communications equipment that prevented a transmission, but it didn't lead to any damage or risk of significant harm
<b>Dangerous goods – Severity 2</b>
A dangerous or hazardous goods occurrence that doesn't meet the severity 1 criteria, but requires (or should have required) emergency services to attend
<b>Dangerous goods – Severity 3</b>
A dangerous or hazardous goods occurrence that doesn't require emergency services to attend (eg a wagon or container was used to transport dangerous good and didn't have the correct documentation and/or placards with it)
<b>Derailment – Severity 2</b>
<ul style="list-style-type: none"> <li>• A derailment of a passenger rail vehicle that had passengers on board, but no one required hospital treatment for their injuries</li> </ul>

<ul style="list-style-type: none"> <li>• A derailment that caused damage (not estimated to be more than \$200,000)</li> </ul>
<b>Derailment – Severity 3</b>
A derailment that didn't cause damage and no injuries occurred (eg a lift off derailment)
<b>Electrical infrastructure irregularity – Severity 2</b>
<ul style="list-style-type: none"> <li>• An electric rail vehicle travels from a live area to a dead area of overhead power and livens the dead area, putting people at risk of serious injury</li> <li>• A rail worker receives a shock from a rail vehicle</li> <li>• There are reports of a live overhead line touching the ground or a structure/vehicle</li> </ul>
<b>Electrical infrastructure irregularity – Severity 3</b>
<ul style="list-style-type: none"> <li>• A tram, electric locomotive or EMU is directed into a non-electrified road where it runs out of overhead traction wire</li> <li>• Some debris is hanging from an overhead traction wire</li> </ul>
<b>Explosion – Severity 2</b>
<ul style="list-style-type: none"> <li>• A trackside explosion next to a rail vehicle or property that caused damage (not estimated to be more than \$200,000)</li> <li>• An explosion (eg firework) on a passenger rail vehicle when there were passengers on board, but none were injured requiring hospital treatment</li> </ul>
<b>Explosion – Severity 3</b>
An explosion is reported and the nearby track is closed pending confirmation there are no track issues
<b>Fire and Fumes – Severity 2</b>
<ul style="list-style-type: none"> <li>• A trackside fire next to a rail vehicle or property that caused damage (not estimated to be more than \$200,000)</li> <li>• A fire on a rail vehicle that caused damage (not estimated to be more than \$200,000)</li> <li>• A fire on a passenger rail vehicle in service</li> <li>• Smoke or fumes filling a passenger compartment while in service</li> </ul>
<b>Fire and Fumes – Severity 3</b>
<ul style="list-style-type: none"> <li>• A trackside fire away from rail vehicles or property that is extinguished before any damage occurs or any rail vehicles are at risk</li> <li>• A fire on a non-passenger vehicle (including dynamic brake grid fires) that does not cause any damage</li> <li>• Smoke or fumes (without observed fire) coming from a rail vehicle</li> <li>• Activation of a personal fume/gas alarm that indicates that gas/fume levels are approaching a level that could be dangerous</li> <li>• A fire evacuation at a railway station that has a safety impact on railway operations (eg safety critical staff are impacted or passengers move into the vicinity of rail vehicles)</li> </ul>
<b>Fire and fumes – Examples of what you don't need to report</b>
A fire alarm at a railway station that has no safety impact on railway operations
<b>Level crossing occurrence – Severity 2</b>
<ul style="list-style-type: none"> <li>• A road vehicle fails to stop at a level crossing and there is nearly a collision with a rail vehicle</li> </ul>

<ul style="list-style-type: none"> <li>Any damage to a level crossing that causes it to malfunction (wrong-side) and a train passes through the LX before a speed limit has been put in place</li> <li>A person walks or cyclist rides across the level crossing in front of a train (near collision)</li> </ul>
<b>Level crossing occurrence – Severity 3</b>
<ul style="list-style-type: none"> <li>A person, cyclist or motorist passes across a level crossing in front of a train, but it is not close enough to be a near collision</li> <li>Damage to level crossing warning devices that doesn't cause it to malfunction or is detected and managed before a train passes through the LX</li> </ul>
<b>Level crossing occurrence – Examples of what you don't need to report</b>
Contact between a road vehicle and a barrier arm that doesn't cause damage to the level crossing warning devices
<b>Load irregularity – Severity 2</b>
<ul style="list-style-type: none"> <li>A load is protruding beyond the loading gauge</li> <li>A load activated a structural overload warning and the service had to reduce its speed to 40km or below to accommodate</li> <li>A dragging bond chain, loose strops or a load fell off</li> </ul>
<b>Load irregularity – Severity 3</b>
<ul style="list-style-type: none"> <li>A load has shifted while in transit but has not moved beyond the loading gauge</li> <li>A load activated a structural overload warning, but the service didn't have to reduce its speed below 40km to accommodate</li> <li>Incorrectly secured loads and/or doors found in-service or at destination</li> </ul>
<b>Movement authority exceeded – Severity 2</b>
A train passed unauthorised into a section with workers in the corridor, but stopped in time after the driver spotted them (or the workers saw the train and moved)
<b>Movement authority exceeded – Severity 3</b>
A train passed unauthorised into a protected work area, but no one was working at the time
<b>Rail vehicle irregularity – Severity 2</b>
There is a component failure on a rail vehicle that causes a significant hazard
<b>Rail vehicle irregularity – Severity 3</b>
<ul style="list-style-type: none"> <li>Faulty passenger train doors (eg won't close) while the train is at a platform</li> <li>A train's brakes won't release while on route</li> </ul>
<b>Railway security – Severity 2</b>
<ul style="list-style-type: none"> <li>A person on the wrong side of the tracks when a service toots and stops short</li> <li>Emergency brakes applied as a trespasser crosses the tracks in front of a train</li> </ul>
<b>Railway security – Severity 3</b>
<ul style="list-style-type: none"> <li>Trespassers are witnessed accessing the corridor in a non-authorized location (eg not a on a cycle lane or public access way)</li> <li>Objects thrown at rail vehicles while in service</li> </ul>

<ul style="list-style-type: none"> <li>• A near-collision with an object on track (including large animals) that was big enough it could have caused significant damage or harm if a collision had occurred</li> <li>• Antisocial behaviour that either compromises the safety of railway operations or puts rail passengers and/or workers at risk of harm (eg fights occurring on a train)</li> <li>• Security events that either compromise the safety of railway operations or put rail passengers and/or workers at risk of harm (eg Bomb threats on rail vehicles)</li> </ul>
<b>Railway security – Examples of what you don’t need to report</b>
<ul style="list-style-type: none"> <li>• A report of someone at risk of being in the corridor, but never sighted in the corridor</li> <li>• Antisocial behaviour that doesn’t compromise railway operations safety nor put passengers and/or workers at risk of harm (eg fare evasion or tagging)</li> <li>• A passenger applying the emergency brake without cause, but the train is in a safe location</li> <li>• A near-collision with an object that wasn’t big enough to cause damage or injury if it had been collided with (eg branches from storm damage, small animals)</li> <li>• Trespassing stock reported in the rail corridor that didn’t result in a near collision</li> </ul>
<b>Runaway rail vehicle – Severity 2</b>
<ul style="list-style-type: none"> <li>• A parting where the rail vehicle(s) are stopped in an uncontrolled way before a collision or derailment occurs</li> <li>• A rail vehicle parting on a passenger train</li> </ul>
<b>Runaway rail vehicle – Severity 3</b>
<ul style="list-style-type: none"> <li>• A mainline train parting where the parted vehicles come to a controlled stop in a safe part of the network (eg not in a tunnel or on a LX)</li> <li>• A yard parting where the parted rail vehicle(s) come to a controlled stop without endangering people</li> </ul>
<b>Safe working rule or procedure breach – Severity 2</b>
<ul style="list-style-type: none"> <li>• A track worker moved into the vicinity of a track work vehicle while it was still in operation</li> <li>• An operator shunted some wagons while other yard workers were in the vicinity (ie in the rail corridor)</li> <li>• Blocking, a track warrant or some other type of authority applied by the train controller to the wrong location</li> <li>• Blocking, a track warrant or some other type of authority lifted by the train controller prior to rail vehicles or personnel being clear</li> <li>• Platform undershoot or overshoot where passenger doors opened onto track</li> <li>• Safety critical route notice (eg speed reduction) not being passed onto a rail vehicle driver</li> </ul>
<b>Safe working rule or procedure breach – Severity 3</b>
<ul style="list-style-type: none"> <li>• Track workers were on track without the appropriate protection/blocking in place to prevent movement of a rail vehicle into the worksite</li> <li>• A train or other rail vehicle exceeding the speed limit</li> <li>• Platform undershoot or overshoot where passenger doors did not open onto track</li> </ul>
<b>Signal passed at danger (SPAD) – Severity 2</b>
<p>Category SPAD A where a train entered a section without authority and there was a risk of collision because there was potential for a conflicting movement</p>
<b>Signal passed at danger (SPAD) – Severity 3</b>
<ul style="list-style-type: none"> <li>• Category SPAD A where a train entered a section without authority, but there was no risk of collision because the train had not moved into an area of conflict (beyond the clearance zone)</li> </ul>

<ul style="list-style-type: none"> <li>Category SPAD B infrastructure failure where the LE attempted to stop the train before the signal but went beyond the signal because of the circumstances</li> </ul>
<b>Signalling and other movement authority systems irregularity – Severity 2</b>
A wrong-side failure of safe working equipment
<b>Signalling and other movement authority systems irregularity – Severity 3</b>
There is damage to the signalling track circuiting but it continues to operate correctly or fails in a safe mode
<b>Suspected or attempted suicide – Severity 2</b>
A person threatening self-harm was witnessed on the tracks and there was a near collision between them and the train
<b>Suspected or attempted suicide – Severity 3</b>
A person threatening to jump in front of a train (a believable threat)
<b>Track and civil infrastructure irregularity – Severity 2</b>
<ul style="list-style-type: none"> <li>A slip, washout or flooding that caused damage (not estimated to be more than \$200,000)</li> <li>A heat buckle travelled over by a freight or passenger service outside a known speed-reduced heat zone</li> <li>Failure of a tunnel ventilation system while a train or workers were in the vicinity</li> <li>A rail breakage travelled over (or likely to have been) by a freight or passenger service</li> </ul>
<b>Track and civil infrastructure irregularity – Severity 3</b>
<ul style="list-style-type: none"> <li>A slip, washout or flooding that doesn't cause any damage or only very minor damage</li> <li>A rail integrity issue where it is not a broken rail, but needs attention before trains continue to travel over it (eg too many missing bolts on a fish plate or pandrol clips on a length of line)</li> <li>A significant mudspot travelled over by a freight or passenger service at line speed with no temporary speed restriction in place</li> </ul>
<b>Track and civil infrastructure irregularity – Examples of what you don't need to report</b>
A rail breakage that is picked up and managed (eg during an inspection) before any trains have gone over it
<b>Train warning and enforcement systems irregularity – Severity 2</b>
Failure of mechanical train stop to stop a train after a SPAD event
<b>Train warning and enforcement systems irregularity – Severity 3</b>
Failure of a mechanical train stop but failure has been notified and other mitigations put in place

# Quick reference card: Severity ratings

