A simple referencing guide to assist in establishing the initial level of investigation by use of a risk based approach:

The Proportionate Response Model

<table>
<thead>
<tr>
<th>Stage 1</th>
<th>Stage 2</th>
<th>Stage 3</th>
<th>Level of Investigation</th>
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<tr>
<td>Credible worst outcome</td>
<td>Effectiveness of barriers</td>
<td>Wider factors</td>
<td></td>
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</tbody>
</table>

Note: This is an extract from Part 2 of the guidance.

January 2014
Proportionate Response Model

Stage 1 - Credible worst outcome

Soon after the undesired event, when enough information has been gathered, Stages 1 and 2 should be undertaken by competent staff.

Question 1
What is the credible worst outcome?

Note 1 Use the currently available information, eg from initial witness statements, early evidence, identifiable causes, human factors observations and risk assessments.

Note 2 In answering the question start at the least outcome and follow the options below.

Note 3 See on the next page the descriptions of the levels of consequence linked to the decision points 1-5 in green boxes below.

Examples of three accident scenarios:

1. Slip, trip and fall in an engineering depot, resulting in sore ribs but no breakage.
2. Passenger fall after alighting from train, then trying to get on it again, resulting in minor cuts and bruises.
3. Near miss at a level crossing involving a car being stuck in traffic due to road works and moving off just in time.

The following are possible conclusions on Stage 1 for each of the three accidents:

- In the location where the accident happened a more serious injury such as a broken leg would have been unlikely.
- If the person had fallen towards the train they could have fallen between train and platform resulting in a fatal accident.
- If the car had not managed to move off the crossing multiple fatalities could have been expected.

Select credible potential outcome:

- Negligible
- Low
- Medium
- Major
- High

Note: Typical issues to consider when making decisions at Stage 1 and 2 are shown after Stage 3.
### Proportionate Response Model

<table>
<thead>
<tr>
<th>Consequence</th>
<th>Level 1</th>
<th>Level 2</th>
<th>Level 3</th>
<th>Level 4</th>
<th>Level 5</th>
</tr>
</thead>
<tbody>
<tr>
<td>Injury or damage (including financial loss)</td>
<td>There is no actual or potential for injury or damage; no real financial loss other than reporting and recording of the desired event.</td>
<td>Minor injuries and/or minor damage; financial loss up to £5k</td>
<td>Major injuries* (see RIDDOR below) and/or moderate damage; financial loss up to £50k</td>
<td>Single fatality; multiple major injuries* (see RIDDOR below); major damage; financial loss between £50k and £250k</td>
<td>Multiple fatalities; significant damage; financial loss over £250k</td>
</tr>
<tr>
<td>Reputation (societal concern/public relations)</td>
<td>Issue is resolved promptly by day to day management process</td>
<td>Issue is resolved promptly by day to day management process</td>
<td>Stakeholder and community concerns; local media coverage</td>
<td>Major stakeholder and community concerns; major embarrassment for the company; adverse media coverage</td>
<td>Significant adverse impact on the reputation of the company nationally or internationally</td>
</tr>
<tr>
<td>Legal</td>
<td>No actual or potential regulatory or claims issue</td>
<td>No actual or potential regulatory or claims issue</td>
<td>Possible breach of legislation; fines or claims up to £50k</td>
<td>Possible breach of legislation; fines or claims between £50k and £250k</td>
<td>Breach of legislation; possible criminal convictions; fines or claims above £250k</td>
</tr>
<tr>
<td>Environmental</td>
<td>No actual or potential damage to the environment</td>
<td>No actual or potential damage to the environment</td>
<td>Minimal harm; clean up expenses up to £50k</td>
<td>Medium term harm; clean up expense between £50k and £250k</td>
<td>Long term harm; clean up expenses over £250k</td>
</tr>
</tbody>
</table>

RIDDOR 'Specified Injuries' since RIDDOR 2013 (*previously there was a wider list of 'Major Injuries') include:

- A fracture, other than to fingers, thumbs and toes
- Amputation of an arm, hand, finger, thumb, leg, foot or toe
- Permanent loss of sight or reduction of sight
- Crush injuries leading to internal organ damage
- Serious burns (covering more than 10% of the body, or damaging the eyes, respiratory system or other vital organs)
- Scalpings (separation of skin from the head) which require hospital treatment
- Unconsciousness caused by head injury or asphyxia
- Any other injury arising from working in an enclosed space, which leads to hypothermia, heat-induced illness or requires resuscitation or admittance to hospital for more than 24 hours
Proportionate Response Model

Stage 1
Credible worst outcome

Stage 2
Effectiveness of barriers

Stage 3
Wider factors

Stage 2 - Effectiveness of Safety Barriers

Stage 2 can be completed immediately following Stage 1 if the necessary information on barriers/controls, eg from CCTVs and OMTRs, is available.

Stage 2 Determine the effectiveness of barriers against a worse outcome to the event (example uses one barrier only)

1. The individual was not fatigued, was wearing safety shoes and helmet, lighting was OK and there was a spillage policy in place.
2. The driver checked the platform monitors, which were working, and did not see the fallen passenger probably because she fell behind the shelter.
3. Liaison with the highway authority over proposed road works, although undertaken, had resulted in weak control of potential traffic congestion.

Examples

The barriers in place to prevent or lessen the credible worst outcome should now be considered. If the effectiveness of barriers is judged to be high, eg several remained to prevent escalation, then a lower level of investigation than that for the credible worst outcome may be appropriate. When considering the range of barriers where an interface organisation is involved it may be useful to search for controls in the Industry Shared Risk Database. The focus at this stage should be on the more immediate or local barriers and not, for example, the company recruitment policy.

Initial level of investigation

Stage 1 Outcomes:

<table>
<thead>
<tr>
<th>Stage 2: Answer to Question 2</th>
<th>From Stage 1: The credible worst outcome</th>
</tr>
</thead>
<tbody>
<tr>
<td>Negligible</td>
<td>Low, Medium, Major, High</td>
</tr>
<tr>
<td>High</td>
<td>Negligible, Low, Medium, Major, High</td>
</tr>
<tr>
<td>Medium</td>
<td>Negligible, Low, Medium, Major, High</td>
</tr>
<tr>
<td>Low</td>
<td>Negligible, Low, Medium, Major, High</td>
</tr>
<tr>
<td>Negligible</td>
<td>Low, Medium, Major, High</td>
</tr>
</tbody>
</table>

Select the initial level of investigation based on the risk level after considering the barrier effectiveness.

<table>
<thead>
<tr>
<th>LOW initial level of investigation</th>
<th>MAJOR initial level of investigation</th>
<th>HIGH initial level of investigation</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low risk so</td>
<td>MEDIUM risk so</td>
<td>MAJOR risk so</td>
</tr>
<tr>
<td>Record the event</td>
<td>Low level</td>
<td>MEDIUM risk so</td>
</tr>
<tr>
<td>Low level</td>
<td>Medium level</td>
<td>MEDIUM risk so</td>
</tr>
<tr>
<td>High level</td>
<td>High level</td>
<td>MAJOR risk so</td>
</tr>
</tbody>
</table>

Note: Typical issues to consider when making decisions at Stage 1 and 2 are shown after Stage 3.

Note: Negligible effectiveness of barriers would suggest that only pure chance or exceptional skill, which is not trained for, stopped the credible worst outcome.
Proportionate Response Model

Stage 1
Credible worst outcome

Stage 2
Effectiveness of barriers

Stage 3
Wider factors

Stage 3 - Consideration of Wider Factors

As soon as the relevant information is available after stage 2, possibly immediately, then stage 3 must be undertaken by competent staff. Such information may include, eg SMIS downloads on similar accidents. This stage should be checked by a more senior manager, and in the case of medium or high level investigations, this should be by the DCP or similar. The time spent on this stage should be roughly proportionate to the scale of the accident.

The level of investigation should be kept open to review throughout the investigation process.

Question 3
Should the initial level of investigation be confirmed, escalated or downgraded after consideration of the following criteria?
- Any likely systematic management failures
- Existing company policies
- Potential loss via claims and insurance premiums
- The level of investigation for similar previous events
- Other related undesired events forming a series (eg common location, equipment, behaviours, personnel or underlying causes)
- Gaining the optimum safety benefit for the company and the industry
- Other investigations into the same event by, eg, ORR, BPT and RAIB
- A sense check including consideration of public, passenger and stakeholder interests
- Issues relating to other involved Transport Operators

Confirm, escalate or downgrade the initial level of investigation and record the reason for the decision.

Final: Record the event
Final: Low level of investigation
Final: Medium level of investigation
Final: High level of investigation

Examples
This stage uses transparent criteria to ensure consistency in response to other similar events and to check against important factors that could influence the decision on the level of the investigation. It provides the chance to look at the undesired event as part of a bigger picture. It must be applied by competent staff and should then be checked by a more senior manager, and in the case of medium or high level investigations, this should be the DCP (or similar).

Stage 2 - Initial level of investigation:
- LOW
- MEDIUM
- HIGH

Stage 3 - Apply the criteria (Question 3) to confirm, downgrade or escalate level of investigation:

1. Further enquiries revealed that the cleaning company had not been meeting requirements at several depots and two claims were pending
   - ESCALATE
2. There have been no similar incidents at this station or on the route, which has an effective ban of alcohol on trains
   - CONFIRM
3. Over the last 2 years the introduction of new or modified road routes has led to some level crossing incidents. Road/rail incidents account for nearly half the catastrophic train accident risk on Britain’s railways
   - CONFIRM

Select final level of investigation:
- MEDIUM level of investigation
- MEDIUM level of investigation
- HIGH level of investigation
**Proportionate Response Model**

**Stages 1 and 2 - Typical issues to consider when making decisions in the above scenarios:**

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Environmental conditions - eg lighting</td>
<td>Environmental conditions - eg lighting</td>
<td>The barrier sequence and controls operating correctly</td>
</tr>
<tr>
<td>Current workplace and task related risk assessments</td>
<td>Current train dispatch risk assessment - right class and type of trains operating</td>
<td>All signage associated with this type of crossing is presented appropriately to road users and pedestrians</td>
</tr>
<tr>
<td>Footwear policy - and correct footwear worn</td>
<td>Train dispatch arrangements followed correctly</td>
<td>Environmental conditions - foliage obstruction of any part of the crossing and/or signage</td>
</tr>
<tr>
<td>Cleaning and housekeeping arrangements</td>
<td>Any recent building / refurbishment work which may impact on the driver's view of the platform</td>
<td>Current level crossing risk assessment</td>
</tr>
<tr>
<td>State of the flooring</td>
<td>CCTV and monitors working correctly</td>
<td>Use of all the All Level Crossing Rism Model (ALCRM) for this level crossing?</td>
</tr>
<tr>
<td>Fatigue</td>
<td>Correct train stop location and in the correct location and train length platform markers placed appropriately</td>
<td>Proper consultation and liaison between the highway authority (County Council) and Network Rail</td>
</tr>
<tr>
<td></td>
<td>Changed platform dwell times</td>
<td>Road works contractor compliance with any permits to work</td>
</tr>
</tbody>
</table>

**Stage 3 - Typical issues to consider when making decisions in the above scenarios:**

<table>
<thead>
<tr>
<th>Scenario 1</th>
<th>Scenario 2</th>
<th>Scenario 3</th>
</tr>
</thead>
<tbody>
<tr>
<td>Similar incidents/investigations at this location</td>
<td>Similar incidents at this location, with this class of train or on this route involving this company or other operators</td>
<td>Similar incidents at this location or with this type of level crossing</td>
</tr>
<tr>
<td>Previous investigations and immediate and underlying causes</td>
<td>Previous investigations and immediate and underlying causes</td>
<td>Previous investigations and immediate and underlying causes</td>
</tr>
<tr>
<td>Relevant outstanding corrective action reports or recommendations</td>
<td>Relevant outstanding corrective action reports or recommendations</td>
<td>Relevant outstanding corrective action reports or recommendations</td>
</tr>
<tr>
<td>Involvement of those connected with the incident in similar incidents</td>
<td>Involvement of those connected with the incident in similar incidents</td>
<td>Involvement of those connected with the incident in similar incidents</td>
</tr>
<tr>
<td></td>
<td>Appointment of blame by injured person</td>
<td>Appointment of blame by person in the car</td>
</tr>
</tbody>
</table>