Good Practice Interactive Toolkit for low adhesion information provided to drivers
Introduction

Autumn is one of the most difficult times of year for a driver. Low adhesion between a train’s wheels and the railhead is a threat to both safety and service punctuality. On a day-to-day basis, drivers have an important role in managing these risks. Companies invest considerable time, effort and money to help ensure that drivers are provided with quality information that supports confident driving. This includes information: when booking-on, from seasonal briefings, publications, and whilst driving.

This document provides guidance on enhancing what, how and when such information is used so that it:

• supports confident driving during low adhesion conditions;
• promotes driving behaviour that is proportional to levels of adhesion risk; and,
• enables drivers to make good decisions.

To do this means that information must be usable. To help judge whether this is the case, the following usability principles have been developed. The toolkit applies these principles to specific adhesion-related information sources with GB rail operations.

Who should use this document

You should use this guidance if you are involved in:

• Driver management
• Driver training
• Operations standards and safety management
• Managing seasonal preparedness

This guidance will also be of interest to others involved in managing low adhesion risk on the railways.

Using the toolkit

This guidance is presented in the form of a simplified toolkit, which is supported in more detail in www.sparkrail.org/Lists/Records/DispForm.aspx?ID=26075. We recognise that a ‘one size fits all’ approach to adhesion management across the industry is not suitable. You should implement the tools and techniques that your company thinks ‘fit’ your operation, and would be beneficial.

To help with this, the toolkit includes factors for consideration to help you think about whether the option is suitable for your operation (for example, your fleet or booking-on arrangements).

In deciding which tools and techniques to implement you may need to engage with others in your organisation and outside it, such as: drivers, fleet engineering and seasonal delivery specialists.

More information on each stage is also included within the T1 156 managing driver behaviours through adhesion related information flows reports, including the supporting confident driving during leaf-fall by enhancing driver information toolkit report.
Step 1

Seasonal prep, briefings & publications
Booking on
Information received whilst driving
Driver to driver info

Step 2

Step 3

Step 4

Timeliness
Accuracy
Relevance
Simplicity
Availability
Memorability

What are the messages
Review the information
Enhance the adhesion related info
Monitor and review

Memorability
Availability
Simplicity
Relevance
Accuracy
Timeliness
What are the messages?

- The first step is identifying the current information provided to drivers. This can be carried out leading up to autumn and as part of the seasonal preparation so there is time to make any changes identified.
- The table on the next page lists ways in which information can be delivered to drivers at each opportunity. For each opportunity, use these questions to assess the information provided:

<table>
<thead>
<tr>
<th>Question</th>
<th>Why this is important</th>
</tr>
</thead>
<tbody>
<tr>
<td>What messages are given to drivers?</td>
<td>The content should support driver understanding, desirable behaviours and confidence.</td>
</tr>
<tr>
<td>What format are they delivered in?</td>
<td>The format should ensure ease of use and promote engagement.</td>
</tr>
<tr>
<td>What is the tone of the message?</td>
<td>The tone should promote the right levels of confidence without instilling fear (including confidence in on-train systems and operational processes).</td>
</tr>
<tr>
<td>At which opportunity is the information delivered?</td>
<td>Publications are best issued well in advance of autumn to maximise the chances of them being read by drivers ahead of face-to-face briefings.</td>
</tr>
<tr>
<td>When was the information last reviewed?</td>
<td>Regularly reviewing seasonal information helps to ensure that messages stay relevant and up-to-date.</td>
</tr>
</tbody>
</table>

Step 1: What are the messages?

Examples of typical message formats are provided below. Note: This is not exhaustive.

### Seasonal preparation
- Magazine articles
- Newsletters
- Flyers
- Videos
- Presentations
- Posters
- Briefings and discussions
- Quizzes and other games
- In-cab indications and how the train systems work including the best ways to use them
- Confidence in how adhesion incidents are managed

### Booking on
- Notices
- Forecasts
- Electronic information
- Videos playing on a loop
- If the information can only be displayed locally at a booking on point, or if it can be provided personally to electronic devices

### Information and feedback while driving
- Caution information provided via the signalling system
- Driver advisory systems
- In-cab indications
- Feedback from driving (including brake tests and observing conditions)
- Any planned use of GMS-R messages including those that require an acknowledgment

### Driver-to-driver information sharing
- Face-to-face discussions
- Written notes in depots (e.g. on whiteboards or flip charts)
- Via text on group messaging apps and social media
- Use of trade union and H&S reps to promote key messages
- Local champions
Review the information sources identified in step 1 against these six usability principles.

Information will need to be gathered from a range of sources including targeted questions asked to drivers and other users through to incident reviews and performance and weather forecast data.

Getting information from different sources provides a comprehensive picture of how usable and effective the information is.

- **Timeliness**: Information needs to be available at a convenient time prior to the need to act on it.
  
  Example: a GSM-R caution for poor railhead needs to be received in time for the driver to slow and prepare to brake.

- **Accuracy**: Information needs to be perceived as correct and up-to-date.
  
  Example: a correct weather forecast for afternoon drizzle is helpful (especially if conditions are different when the forecast is viewed).

- **Relevance**: Information needs to be important to the recipient.
  
  Example: an adhesion notice that relates specifically to the driver’s route will be helpful.

- **Simplicity**: Details need to be understood ‘at-a-glance’.
  
  Example: a simple ‘leaf-colour’ warning is much easier to understand than numeric forecast data covering every hour of the day.

- **Availability**: Drivers need to be able to access the information they need.
  
  Example: late notices printed and displayed in the late notice case at the booking-on point.

- **Memorability**: Details need to be memorable.
  
  Example: Drivers are more likely to remember a short list of low adhesion sites, especially if the location names correspond with those used for route learning.
Collect and review information from a number of sources including feedback from drivers.

### What good looks like

<table>
<thead>
<tr>
<th>Information is available at a convenient time prior to the recipient needing to act on it</th>
<th>When is the information provided relative to when recipients need to act on it? Do recipients think this information is provided at the right time, not too late or too far in advance?</th>
<th>Timely</th>
</tr>
</thead>
<tbody>
<tr>
<td>Information is (and is perceived as) correct and up-to-date</td>
<td>Is the information correct and up-to-date? Does the recipient trust it?</td>
<td>Accurate</td>
</tr>
<tr>
<td>Information is understandable ‘at a glance’?</td>
<td>Can the recipient understand the information at a glance? Can the recipient easily explain what it means?</td>
<td>Relevant</td>
</tr>
<tr>
<td>The information is meaningful to the recipient</td>
<td>Is the information relevant to the recipient’s task (e.g. does it relate to traction or route knowledge and use terms/language known by drivers)? Have you assured yourself that information source is relevant to the intended audience and applicable to the tasks they perform?</td>
<td>Simplicity</td>
</tr>
<tr>
<td>The information is accessible by the intended audience when required</td>
<td>Can the recipient easily access the information? Can the recipient access it when they want or need to?</td>
<td>Available</td>
</tr>
<tr>
<td>The details are memorable</td>
<td>Can the recipient recall the information they need to commit to memory? Does the recipient find the information manageable to retain?</td>
<td>Memorable</td>
</tr>
</tbody>
</table>

### Enhance the information

- There are 4 opportunities to enhance the information:
  - As part of seasonal preparation, planning and the development of briefing materials, policies and instructions
  - Booking on, where information is provided
  - The information received when driving
  - Driver to driver information

- Following the review of current information, consider how the usability of the information provided at each of the four opportunities could be enhanced.
- The following tables suggest how this could be achieved for each of the 6 usability principles.
Seasonal prep, briefings and publications

Issue publications sufficiently in advance of autumn so recipients have time to read them before face-to-face briefings, but not so far ahead the messages are forgotten.

- Ensure that briefers have the right skills (e.g. personal experience, positive attitude).
- Ensure case studies reflect current arrangements.
- Use real world testimonies where available.
- Make sure the information reflects the ‘as is’ situation, so it is trusted and builds confidence.

- Timeliness
- Accuracy
- Relevance
- Simplicity
- Availability
- Memorability

Enhance the information

Step 3

Timeliness
- Issue publications sufficiently in advance of autumn.

Accuracy
- Ensure that briefers have the right skills.

Relevance
- Ensure case studies reflect current arrangements.
- Use real world testimonies.
- Make sure the information reflects the ‘as is’ situation.

Simplicity
- Emphasise key priority points of the trusted information or instructions identified above.
- Use graphics, videos and pictures to communicate key messages.

Availability
- Use quizzes and similar activities to help recipients to engage with the key information.
- Provide reminders to help promote messages.
- Ensure key areas are consistent and don’t compete for memory space.

Memorability
- Use graphics, videos and pictures to communicate key messages.
- Use quizzes and similar activities to help recipients to engage with the key information.
- Provide reminders to help promote messages.
- Ensure key areas are consistent and don’t compete for memory space.

Consolidate adhesion-related information into as few documents and formats as possible (balancing with the need for simplicity).
Step 3

Enhance the information

**Booking on**

Streamline the process for getting information from the railhead treatment train to recipients. Remove out of date information so what is posted is always up to date.

Timely

Put a time and date on posters and notices to help readers determine its relevance. If the information is a forecast, be clear about the levels of confidence in its accuracy.

Accurate

Streamline information so it can be read and understood in the time readers have available, taking into account other booking on tasks they need to complete. Structure and display notices so their applicability and relevance is clear to the reader.

Relevant

Focus on the key details that are important to the reader. Where possible, remove information that is not relevant to the intended recipient (such as information concerning other routes).

Simplicity

Use electronic systems where possible to allow recipients to pick up new information between journeys. Make it easy for the target audience to take with them. (e.g. personal copies, electronic versions available for personal or company devices, encourage annotation of diagrams and schedules etc.)

Available

Present information in an order that makes sense (e.g. link it with existing knowledge) Use memory aids like acronyms and prompts to help readers retain key messages and instructions.

Memorable
Seasonal prep, briefings & publications

Booking on

Information received whilst driving

Driver to driver info

Enhance the information

Step 3

Enhance the information

Info received while driving

- Promote timely brake tests.
  - Use dynamic information from previous trains through systems or use of onboard staff to relay any messages directly or via signallers.
  - Use on-train systems to provide meaningful feedback of operation such as WSP and sand for both traction and braking.

- Ensure brake tests are performed at appropriate locations (not in tunnels) and in good time to inform braking techniques.
  - Explain how the train systems such as WSP and sanders work to promote effective use.

- Explain in easy-to-understand terms what various in-cab indications mean (e.g. WSP, sanding).
  - Provide clarity around what is meant by ‘expected’ adhesion conditions to support accurate reporting and clear instructions on how to report adhesion conditions.

- Relate in-cab indications to the specific tasks that drivers need to undertake.
  - What type of driving instructions make sure the train systems are being used to their maximum effectiveness such as train sanders (e.g. remember if you experience WSP, then use step ?? to get sand).
  - Help drivers to recognise the weather/environmental conditions and how to adapt their driving to them (e.g. the difference between drizzle and damp rail to rain and predicting and reacting to changes in conditions).

- Develop non-technical skills to help drivers stay attuned to the conditions.
  - Have information available at other locations where collection by drivers can be easier, such as messrooms.

- Encourage the use of memory aids (e.g. acronyms, prompts) to help drivers manage their workload.
  - Use of prompts, verbal messages and reminders.
  - Encourage communications with others such as onboard staff and signallers.
Step 3
Enhance the information

**Driver-to-driver information sharing**

- Promote reporting via GSM-R as the optimal way to warn other drivers about low adhesion condition.  
  - Timely
- Avoid management interference in driver-to-driver messaging channels including written, published and electronic but encourage responsible use (recognising that drivers trust other drivers).  
  - Accurate
- Not directly applicable as the information will be coming from driver for drivers.  
  - Relevant
- Encourage drivers to add a time and date on whiteboard notes to help other drivers determine its relevance. Make these facilities available and easy to use. Promote and value their use through senior drivers and instructors. Promote responsible use of whiteboards/flip charts, discouraging use for unrelated topics.  
  - Simplicity
- Consider the best position to locate whiteboards/flip charts to allow drivers to add and read messages. Make sure they are in the right locations, considering locations outside of messrooms such as known areas where reporting of previous conditions could be a value.  
  - Available
- Not directly applicable as the information will be coming from driver for drivers.  
  - Memorable
With any system it is important to continue to monitor and review its application and use, e.g. following the simple Plan, Do, Check, Act approach. Therefore after and during each autumn season consider monitoring and reviewing the information provided including:

- Gather feedback from drivers and all other users
- Review the extent to which the information was delivered as planned
- Evaluate the extent to which the information had the desired effect
- Compare with previous years and information reviews (Step 1)
- Assess how well the information matched the actual conditions on the day
- Review against the usability criteria