Risk Triggered Commentary Driving

Arriva Trains Wales have recently developed a DVD on Risk Triggered Commentary Driving (RTC). The RSSB Human Factors team has been asked to comment on this technique and consequently, the purpose of this paper is to provide rail industry decision makers with an overview of RTC.

What is RTC?

RTC involves drivers speaking aloud what they usually just think to themselves, when driving. By following this process, drivers can listen to their thoughts and the subsequent actions they are planning to do – allowing them to “sense check” what they should do next.

Ideally, RTC involves not just repeating what a driver sees, but also the required action they will need to take. For example, next signal is a single yellow – brake to notch two, once I pass under the bridge.

Why RTC, and what are its effects?

Humans have evolved by developing strategies in the way they respond to situations they encounter frequently, such as train driving. Over time, this allows drivers to respond more skilfully and possibly complete other tasks at the same time – simply because they have more attention capacity to think about other things. However, it also means that they may fall into the trap of working on “auto-pilot” – as they are used to, for example, driving a particular route each week – so they could expect to have similar experiences each time, such as signalling sequences, braking points or station stops. This could lead to drivers becoming distracted or having reduced concentration levels. One potential solution to this is RTC.

RTC brings to a driver’s attention, information that is usually stored in parts of their brain that they generally don’t think about – so instead of driving on “auto-pilot”, they are driving with their full attention on what they are doing now, and will need to do, in the near future.

Using this process has both positive and negative effects. Positively, the process allows drivers to evaluate the next steps they are planning.
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Additionally, it helps them keep fresh and remember key information they need to perform the job of train driving. Some drivers even find that it helps deal with the effects of fatigue and aids their concentration by focusing on the risk at hand.

Negatively, drivers could find that using this process takes too much effort and becomes a distraction from train driving. This could be particularly noticeable when drivers are first trying out RTC. Furthermore, some research indicates that following this process can lead to an increase in errors being made which could impact on a person’s driving performance. These errors can be caused by a person struggling to say aloud what they are thinking and perform a skilled task at the same time. Consequently they could, for example, miss information in the environment they need to respond to, or take longer to respond than normal. Finally, using this process all the time will lead to a driver getting too used to it, and no longer actively focus their attention on what they are saying.

How to use RTC

RTC could be of great benefit to some drivers, if it is used appropriately. Drivers should be briefed on the positive and negative elements of RTC and, if possible, see the process modelled for them – then be allowed to decide for themselves whether to use the process or not. It should be stressed that RTC should be used as an additional risk mitigation strategy, for example, on approach to red signals, when approaching stations after changes to stopping patterns, or when drivers feel their concentration dropping. Furthermore, this process should be stopped under high workload conditions or if the driver feels that it is, in any way, taking away from their driving performance.

Further information or questions

Please contact the RSSB Human Factors team 020 7904 7777. Additionally, Arriva Trains Wales have produced a DVD on this topic detailing their approach to developing and trialling RTC with their drivers.