

Road Safety Audits

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Introduction

This note is intended to assist professionals and other interested people needing to respond to a Road Safety Audit (RSA). It outlines the RSA process and how it has been applied, recent changes that reflect new guidance, issues on risk and liability and dealing with cycling and walking. It includes a checklist for use when reviewing and responding to a RSA. For schemes with which Sustrans is involved, the technical support team can help with answering questions and examining recommendations that are considered unduly risk averse.

Recent design guidance^{1,2} means that a RSA needs to be able to:

- help deliver innovative schemes whilst ensuring they are safe.
- provide the benefits of safety audit in a way that will also improve conditions for cyclists and pedestrians.
- develop a new breed of safety auditors with the necessary competence and training.

Background

RSA is an independent assessment of potential road safety problems associated with a highway scheme. It is only mandatory on Trunk Roads and Motorways, but is regarded as good practice on local roads. It is a valuable process which has no doubt contributed to the long term downward trend in road casualties in the UK.

A duty for highway authorities to improve road safety was included in the Road Traffic Act 1988, and the first guidance on RSAs was published in the mid-1990s. The highways design standard for safety audits on Trunk Roads and Motorways was published as part of the Design Manual for Roads and Bridges (DMRB) as HD19/03³.

RSA has changed considerably since revised guidance was published by IHT in 2008.⁴

The DMRB applies to trunk roads and motorways. These are predominantly high speed roads serving a strategic traffic function and DMRB therefore has a strong focus on designing out conflict and reducing the demands on road users. Typically this has resulted in high standards for visibility, easy curvature of roads, generous carriageway widths and segregation of vulnerable road users from motor traffic. Until relatively recently, due to the absence of design guidance for local roads, the DMRB had been applied much more widely than originally intended, to include local roads and minor highway improvement schemes, including cycle facilities. It should be noted that, whilst much of the DMRB is not relevant to providing useful local facilities for cyclists, the thinking behind it still influences many highway engineers involved in safety audit and cycling schemes on local roads.

Safety Audit Process

The RSA process broadly involves:

- Safety Audit Brief: instructions to the Safety Audit Team to initiate the Safety Audit process, issued by the 'Scheme Sponsor'.
- Audit Report: produced by the Safety Audit Team, detailing any concerns they have and their recommendations for addressing each of these.

¹ Manual for Streets, DfT, 2007

² Manual for Streets 2, Chartered Institution of Highways and Transportation, 2010

³ HD19/03 Road Safety Audit, Design Manual for Roads and Bridges, 2003

⁴ Road Safety Audit, Institution of Highways and Transportation, 2008

- Exceptions Report: the design organisation's response to the Audit Report. This identifies which recommendations are accepted and which are not; where any recommendation is not accepted, the report will give reasons for that decision.

There are four stages within the design and implementation of a highway scheme when a RSA might be undertaken:

- Stage 1: Preliminary design stage
- Stage 2: Detailed design stage (Stages 1 and 2 are often combined for a small scheme)
- Stage 3: Following construction (ideally prior to opening)
- Stage 4: Monitoring (rarely done)

The RSA must be undertaken by engineers independent of the scheme designer, although they may be part of the same organisation. The RSA must be led by practitioners with suitable road safety engineering experience, particularly with a background in accident remedial schemes, and evidence of Continued Professional Development (CPD). They should have experience relevant to the scheme they are auditing.

If it is undertaken with reference to HD19/03 of DMRB it requires a minimum of two people, otherwise it can be done by one person although a team of at least two is recommended. Recommended practice is to have an Audit Team Leader and an Audit Team Member, possibly with an Observer.

A local cycling representative may be asked to attend in the role of a specialist advisor, which can be especially valuable for a Stage 3 audit.

The cost of undertaking a RSA ranges from around £800 for a minor access to a development to £2,000 for a major signal junction.

A local highway authority may set a cut off level for scheme cost below which a RSA is not normally undertaken, say at £50k, but there is significant variation between local authorities – some audit all almost highway schemes, others none.

Application of Safety Audit

The introduction of the RSA process to independently review schemes has proven a cost effective technique to achieve long term overall casualty reduction. However, in many situations the traditional car-focussed DMRB approach to RSA has resulted in a tendency for safety auditors to encourage designs that achieve safety by segregating vulnerable road users from motor traffic. The process has been perceived as creating a barrier to encouraging more cycling, through fear of litigation and discouraging innovation, resulting in over-engineered schemes.

The majority of streets in our towns and cities are mixed use environments serving a multitude of functions, the movement of traffic being just one of them. The more narrow approach to design used in the past has resulted in a lot of poor quality streets dominated by traffic, which are difficult for pedestrians and cyclists to negotiate safely. The Preface to Manual for Streets⁵ (MfS1) states that:

- Research carried out in the preparation of Manual for Streets indicated that many of the criteria routinely applied in street design are based on questionable or outdated practice.

There have been growing concerns that, when trialling new and innovative techniques, the traditional safety audit approach has not always been fit for purpose. However, where a Safety Auditor has a genuine interest in and knowledge of the latest research and innovations in road and street design

⁵ Manual for Streets, DfT, 2007

and the wider duties placed on local authorities, as outlined in MfS1 and Manual for Streets 2⁶ (MfS2), RSA can be a very useful tool.

It is important to realise that a scheme does not ‘pass’ or ‘fail’ a RSA. The Audit Report will detail aspects of the scheme design of concern to the Audit Team and their recommendations for addressing these. **The designer may choose which recommendations to accept and incorporate in the design and which ones not to accept.** The designer should provide their response to the RSA recommendations in the Exceptions Report:

- Designers do not have to comply with the recommendations of a safety audit, although in such cases they would be expected to justify their reasoning in a written report. (MfS1, 3.7.8)

Whilst a RSA is not cast in stone, the designer will have to provide a well thought out and documented argument if they are going to go against the recommendations contained within the Audit Report. To say, for example, that a shared space scheme is safe, they need evidence that this type of scheme is safe. However, the Safety Auditors’ recommendations must also be evidence based, and they should be able to substantiate their concerns if challenged. Innovative schemes such as shared space therefore pose a particular challenge to Safety Auditors.

Risk and Liability

This was addressed to some extent in the revised IHT Guidelines in 2008, which allows a more balanced assessment of risk than previously. It acknowledges many of the MfS principles and Section 6.5 provides this framework for assessing risk:

Risk Assessment / Risk Factor

Frequency	Frequent	Probable	Occasional	Remote
Severity				
Catastrophic	Very High	High	High	Medium
Critical	High	High	Medium	Medium
Marginal	High	Medium	Medium	Low
Negligible	Medium	Medium	Low	Low

The UK Roads Board second edition of Highway Risk and Liability Claims⁷ (HRLC), which sets out the legal uses and obligations of users of the highway, reinforces this and states that (5.4.2):

- It should be within the capabilities of a competent road safety auditor to provide some quantification of the risk, and the reasoning why the recommendation is made. This approach gives the designer a clear indication as to the importance of particular issues and problems raised, and an auditable trail. The highway authority may establish a standing policy on the extent of a designer’s discretion in responding to a recommendation in a Road Safety Audit. For example:

⁶ Manual for Streets 2, Chartered Institution of Highways and Transportation, 2010

⁷ Highway Risk & Liability Claims, UK Roads Board, 2009

Very High	Recommendation must be heeded unless redesign avoids problem
High	Implementation of recommendation strongly recommended unless redesign avoids problem
Medium	Implementation of recommendation discretionary
Low	Implementation of recommendation not critical to reasonable safety

MfS1 sought to assuage fears of some highway authorities when considering more innovative designs at variance with established practice concerning liability in the event of damage or injury. MfS2 provides further guidance on risk and liability and cites extracts from HRLC. Some key quotes are included below:

Risk and liability:

- Drivers are responsible for their own safety: “The overriding imperative is that those who drive on the public highways do so in a manner and at a speed which is safe having regard to such matters as the nature of the road, the weather conditions and the traffic conditions. Drivers are first and foremost themselves responsible for their own safety” Gorringe v Calderdale , Lord Scott at para 76 (MfS2 3.1.10)
- Design, defects and liability: “There have been very few cases relating to alleged defects in design. A request went out to members of the CSS in 2008 for cases that had gone against the authority on the basis of design. There was no significant history. There was a small number of live cases that were tending to focus on trip hazards resulting from design. There is of course nothing stopping an individual making a claim for a design defect, however the instances seem rare and the chances of success remote.” HRLC (MfS2 3.1.13)
- Professional judgement: “The authors of guidance, however accomplished, will not be cognisant of the site and situation in question. It would be neither reasonable nor rational to presume that anyone could produce an optimal design in abstract. The informed judgement of trained professionals on-site, should logically take precedence over guidance.” HRLC (MfS2 3.2.3)

Road Safety Audit:

- A highway authority might consider asking for a risk assessment to be provided for each recommendation resulting from a RSA. (MfS2 4.5.8)
- The road safety auditor should be able to provide some assessment of the risk, and the reasoning why a recommendation is made. This approach gives the designer a clear indication of the importance of particular issues and problems raised, and an audit trail. (MfS2 4.5.11)

The HRLC identifies risk aversion as “The fear of receiving a claim has caused some highway authorities to adopt an unnecessarily defensive position over what are quite reasonable innovations. This cannot be in the public interest.” (HRLC 2.4.4)

What the risk assessment approach allows the designer to do is to weigh up all of the evidence in coming to a balanced decision. For example, when considering whether to permit cycling in a pedestrian area they would look at studies of pedestrian / cycle conflict in other towns and see if there is an actual increase in risk and compare the high risk of cyclists being injured on (say) the busy parallel gyratory route compared to the risk with pedestrians being injured as a result of allowing them in the pedestrian area.

Cyclists and Pedestrians

Where a safety audit is undertaken it is one of a number of considerations that go to making a balanced decision. The HRLC Guide recommends (5.1.1) using the Hierarchy of Users (from MfS) as the basis for making a balanced decision:

Consider first  Consider last	Pedestrians
	Cyclists
	Public transport users
	Specialist service vehicles – e.g. emergency services, waste etc
	Other motor traffic

It is important to emphasise the need for safety auditors to actually get out on their bikes when they are doing audits as that gives a different perspective compared to walking or driving a car.

There are a number of traditional conflicts that are likely to be raised in RSAs:

- On road vs. off road
- Segregated vs. unsegregated
- Cycling on one way streets
- Cycling in pedestrian areas
- Designing for experienced commuters or less confident cyclists

In addition there are a number of newer challenges that Safety Auditors are likely to face:

- Some new techniques are relatively untried, with little data to back up designer's claims. Safety Auditors need to collect such data as is available to verify which aspects of these new designs are safe and which may be causing problems.
- Design-led ideas, such as shared surfaces or the wholesale removal of pedestrian guardrailing for example, can be contentious. There is a need to look at each case on its merits before taking the decision.
- There is also a potential conflict between the duty for local authorities to keep traffic moving under the Traffic Management Act, and the desire to reduce speeds and make streets less intimidating for pedestrians and cyclists.
- The blind / partially sighted issue is particularly relevant to safety audits of shared use areas, bearing in mind there are some two million people in the UK who fall into this category. Its not just actual safety, but their perception of safety too that is important.
- There is also the general perception by the public that off road cycling is always safer, which is not necessarily the case.

Responding to Safety Audits

The following checklist may be useful when reviewing and responding to a RSA which raises safety concerns on a scheme:

- Is it a RSA or 'safety assessment'? Was the auditor qualified?

- Review concerns raised: which you agree with; which you don't and why. What evidence do you have?
- Review recommendations made to address these concerns: which you agree with; which you don't and why?
- Was an exceptions report done? If so, what does it say?
- Is a Risk Assessment provided? The Safety Auditor should be able to provide some assessment of the risk, and the reasoning why a recommendation is made. Ask for the risk assessment to be provided for issues raised and recommendations resulting from the RSA.
- Any wider contextual issues? e.g. a contraflow scheme needs to take account of the suitability of alternative routes available to cyclists if the scheme is not implemented.
- Can the Auditors produce evidence to support their concern / recommendation? Are there case studies they can refer to which substantiate their concern? Can you find case studies that show otherwise?

Remember that the recommendations from a Safety Audit are not cast in stone and, for schemes with which Sustrans is involved, Sustrans' technical support team is available to provide advice.