



## Improving reversing (backing) safety of fleet vehicles

Dr Will Murray: [will.murray@virtualriskmanager.net](mailto:will.murray@virtualriskmanager.net), [www.virtualriskmanager.net](http://www.virtualriskmanager.net)

### BACKGROUND

Insurance claims data from many companies and research undertaken at the University of Huddersfield suggests that between a quarter to a third of all reported freight transport collisions arise from vehicles reversing/backing, in some cases many more. Despite this, the vast majority of such collisions go unnoticed at the government and company levels. As a result there is only limited comparative data and, until recently, very few specific reversing-based reduction interventions such as vehicle-mounted safety cameras have been implemented by vehicle operators, driver trainers or policy makers.

Thirty years ago, in 1982, the Health and Safety Executive (HSE) 'Transport Kills' document highlighted reversing as a manoeuvre responsible for a large proportion of fatal collisions in the UK. More recently, the HSE estimated that nearly 25% of all deaths involving vehicles at work occur while vehicles are reversing. The 25% figure comes from scrutiny of HSE inspectors' accident investigation reports, and includes approximately 10-20 deaths per annum. Vehicle direction is not always recorded, and HSE does not investigate all accidents reported to it – so the figures are possibly an underestimate.

This led us to undertake a great deal of work on reversing/backing safety, and culminated in the following research paper and a number of other outcomes:

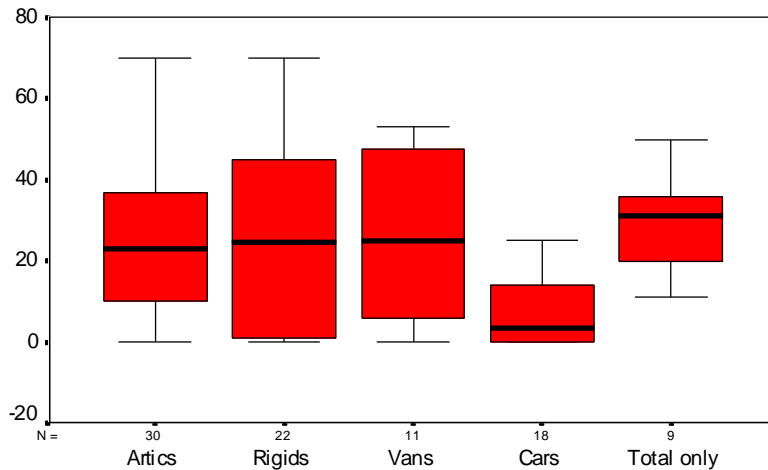
- Murray, W. Auditing the safety of vehicles backing-up (reversing), 9th World Conference on Transportation Research (WCTR) Selected Proceedings October, 2003. Elsevier

A typical case, which recently went through the courts in the UK, involved a fatal reversing collision at the back door of a retail store. Approximately 38% of the company's vehicle collisions occur when their vehicles are reversing. The average cost of each collision is less than £300, mainly minor damage. Many such collisions never even get into most companies' insurance records, being dealt with as routine vehicle maintenance costs, let alone official UK statistics. For this reason companies and the authorities are often ignorant of the reversing risk until it is too late and someone has been killed or seriously injured. A range of recent research, management development and educational projects have shown that many vehicle operators keep very poor safety performance statistics and often only take safety seriously after a major collision.

In the case of the retailer discussed above, several reduction interventions, particularly improved site procedures and training, were implemented after the event! This case, and many others like it, show the importance of a proactive approach to reversing safety – and applying a range of appropriate management (eg analysis and review), site (eg risk assessment), driver (eg assessment and training) and vehicle-based (eg reversing cameras and alarms) interventions.

## PROACTIVE APPROACH

The starting point for taking a proactive approach is to understand the extent of the reversing risk in your organisation. The graph below shows the percentage of reversing collisions by vehicle type from a research project undertaken with over 50 companies. The black bars show that over 20% of the collisions involving artics, rigids, vans and fleets providing total vehicle data only involved reversing, although the red boxes show that there was some variance in the data – with some van and rigid fleets over 40%.

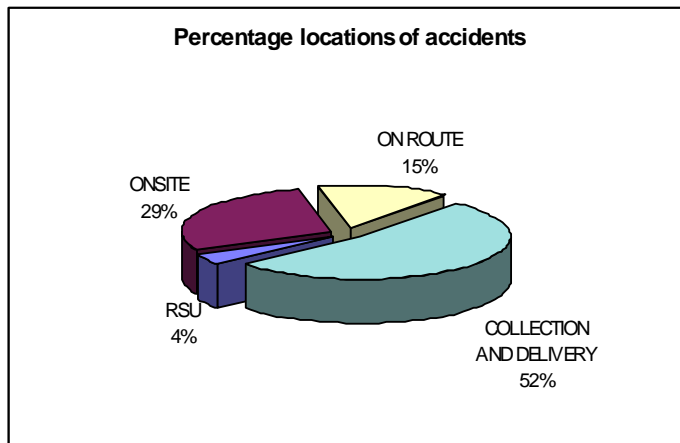


The table below, based on 79,403 motor fleet insurance claims, provides a similar result:

- 13% overall claims involved reversing/backing.
- 15% of light commercial vehicle claims involved reversing/backing.
- 19% of heavier commercial vehicle claims involved reversing/backing.

Vehicle type	Forward	%	NK	%	Parked	%	Reversing	%	Stationary	%	Total
Car	7,116	25%	5,098	18%	11,167	40%	2,877	10%	1,999	7%	28,257
Heavy commercial	1,329	38%	442	13%	869	25%	654	19%	227	6%	3,521
Light commercial	14,018	30%	6,428	14%	16,043	34%	6,799	15%	3,341	7%	46,629
Other	160	16%	536	54%	213	21%	63	6%	24	2%	996
All vehicle types	22,623	28%	12,504	16%	28,292	36%	10,393	13%	5,591	7%	79,403

The second graph shows the locations where reversing collisions tend to take place for a typical retail multi-drop operation, with over half occurring at collection and delivery points, and at the company's own depot or recycling unit (RSU).



Based on the above discussion and data it appears that reversing safety should be addressed by a range of groups, including: vehicle operators, policy makers, researchers, health and safety specialists and driver trainers. Reversing safety improvements can be made in four main areas: management analysis, site procedures and operations, vehicles and people.

## PERFORMANCE REVIEW AND IMPROVEMENT

We have recently developed a 'where are we now gap analysis' as the starting point to address the reversing safety issue. This provides a thorough understanding of the problem and allows decisions to be made on the most appropriate actions to take. The gap analysis is reproduced in full in Appendix 1. The higher your score, the more safe systems of work you have in place for vehicle reversing. The lower your score, the more exposed you are to major reversing safety collisions, high costs and legal issues. It should be applied to the design of all new sites and operations and at existing sites on an annual basis.

The gap analysis falls into four areas:

1. Operational analysis and statistics.
2. Site procedures and operations.
3. Vehicles.
4. People.

For each item you have in place – participants are asked to tick Yes. The percentage figures show how many of the first 50 participants had implemented each of the countermeasures, suggesting that some scope remains for the participants to improve their reversing safety performance.

Communication with drivers and line managers is also important, an example of which is shown in Appendix 2.

## APPENDIX 1 - REVERSING/BACKING SAFETY GAP ANALYSIS FOR FLEETS

<b>Operational analysis and statistics</b>	<b>% Yes</b>
1. Do you know your total number of vehicle collisions and % of collisions involving reversing by vehicle type?	83
2. Do you know the total number of reversing collisions at collection and delivery points, your own company sites and on the road?	70
3. Have you undertaken detailed data analysis on previous reversing collisions to identify causes?	48
4. Do you know the average cost of your reversing collisions?	46
5. Do you track the trend of reversing collisions by the categories shown in 1-4 above?	33
6. Have you identified all reversing operations?	72
7. Have you reduced the need for reversing wherever possible?	80
8. Have you minimised reversing distances?	43
9. Have you done reversing hot-spot analysis and risk assessments?	50
<b>Site procedures and operations</b>	
10. Have you undertaken site visits to improve delivery/collection points?	41
11. Have you made the delivery/collection points aware of the identified improvements?	28
12. Do you regularly consult employees (eg drivers) in the process of developing the layout of new sites?	50
13. Do you have a mechanism to allow drivers to make suggestions for improvements to existing sites?	80
14. Have you implemented procedures and safe systems of work?	87
15. Do your have a reversing checklist and procedures for new sites?	33
16. Do your sites clearly identify your reversing/people areas?	37
17. Have you assessed the quality of your lighting, visibility and mirrors?	78
18. Do you regularly improve yard and site and road layouts?	61
19. Do you regularly review the safety of yard and site 'furniture' (eg posts and pillars)?	76
20. Do you have one-way traffic systems at your sites?	50
21. Have you installed traffic light systems?	9
22. Have you implemented time bans to separate people and vehicles?	4
<b>Vehicles</b>	
23. Have you fitted/specified vehicle proximity devices?	89
24. Have you fitted/specified improved vehicle mirrors?	24
25. Have you fitted/specified auto reversing brakes/bumpers?	41
26. Have you fitted/specified flashing reversing lights?	28
27. Have you fitted/specified reversing beepers/alarms?	9
28. Have you fitted/specified reversing cameras?	46
29. Have you fitted/specified any other reversing aids?	26
<b>People</b>	
30. Have you identified all people likely to be affected?	65
31. Do all your staff involved with vehicles reversing receive a copy of the HSE's 'Reversing Vehicles' publication (11/95 ind (G) i481 c350 (free from the UK HSE)?	24
32. Are all drivers and banksmen/spotters properly assessed, trained and regularly reassessed? (eg seminars, video, data analysis feedback, poster campaigns, online)	41
33. Do you exclude people from reversing areas?	72
34. Is a simple, agreed and clearly visible system of signalling and communication in place?	57
35. Do you regularly audit the management/supervision of reversing areas?	43
36. Do you issue fluorescent clothing to all relevant staff?	87
37. Do your drivers always check their mirrors are clean and correctly aligned and make sure that the reversing area is free of pedestrians?	98
38. Have you developed safe procedures/work instructions for all relevant staff?	87
39. Have you developed safe reversing procedures/work instructions for drivers?	48
40. Do you provide simple, but detailed, collection/delivery point details for drivers?	15
41. Do you provide guidelines/work instructions which visiting drivers must sign for and agree to adhere to when they arrive at your site?	35
42. Do you employ dedicated people as yard and site shunters/banksmen/spotters?	30
43. Do your banksmen/spotters receive and sign for a set of written procedures to which they must adhere?	76
44. Are your banksmen/spotters empowered to undertake regular risk assessments and feed the results back to their managers and supervisors?	74
<b>Total (Of 44)</b>	

## APPENDIX 2: SAMPLE REVERSING/BACKING COMMUNICATION

### Managers and drivers urged to move forward on safe reversing and backing following research based on 80,000 fleet collisions

Based on the work of Interactive Driving Systems across the global motor fleet industry over the past 20 years, REVERSING or BACKING incidents are invariably one of the top 5 collision types encountered by most organisations, and with their high potential for asset damage and injury to bystanders, drivers are being urged to take more care when travelling backwards.

At Interactive Driving Systems we recently undertook the following detailed analysis based on 79,403 motor fleet insurance claims, of which 13% involved reversing/backing. This increased to 15% for light commercial vehicles, and 19% for heavier commercial vehicles.

Vehicle type	Forward	%	NK	%	Parked	%	Reversing	%	Stationary	%	Total
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Given the extent of the reversing/backing risk, which often affects the most vulnerable of road users such as children, pedestrians and outdoor workers, we are sending you the following communication, to cascade as appropriate across all your channels.

After reviewing a great deal of such fleet collision data over many years, Andy Cuerden from Interactive Driving Systems said: *'We believe that all drivers must exercise greater care when reversing/backing, especially fleet drivers visiting customer sites and homes as part of their daily activities'*.

*'Because of the relatively low impact speed, many people don't regard reversing as a significant hazard', Mr Cuerden said. 'However, reversing/backing and slow speed manoeuvring incidents make up a large proportion of fleet collision costs and risks'*.

*'Whether you are travelling forward at 100 kilometres per hour on a highway or reversing/backing at walking pace on a customer's site, the same vigilance, caution and courtesy must apply.'*

#### All drivers are being encouraged to adopt the following tips for safe reversing/backing:

- **Walk** around the vehicle and **look** for obstacles or hazards **before** moving.
- Always beware of pedestrians, but especially **children**. They are unpredictable!
- Reverse **slowly** - turn your head, use your mirrors and check both sides.
- **Avoid** reversing over a long distance.
- Look behind **before** reversing – not as you take off.
- When reversing and turning remember to **watch the front** of your car as well.
- If towing a **trailer**, **practice** reversing with the trailer in a safe location.
- Where possible, reverse or 'pull through' into parking spaces rather than out of them.

Such good practice is typical of the online RiskCOACH modules available globally to organisations using Virtual Risk Manager to identify and support their people who are required to drive as part of their work.

Ends

This road safety communication is an example of the regular monthly mailings from Interactive Driving Systems. More details are available at [www.virtualriskmanager.net](http://www.virtualriskmanager.net)