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Effective occupational road safety programs: A case study of Wolseley

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ABSTRACT

Despite an increasing interest in the potential of occupational road safety (often called fleet safety) to help governments to improve road safety, and organisations to reduce human and asset damage, generate business efficiencies, ensure legal compliance and cut costs, there are few published case studies of organisations that have effectively managed this risk.

The aim of the paper is to address this gap, by developing and evaluating an effective process for improving occupational road safety through a case study of Wolseley, which has invested in a detailed fleet program over the last four years based on research and experience from around the world.

A chronological case study approach describes Wolseley, the processes applied to review, benchmark and manage its occupational road safety, project implementation, project outcomes evaluation and ongoing steps. It also sets out the lessons learned for researchers, policy makers and other organisations.

Over four years Wolseley has improved its process audit scores, halved its third party collision rate, and gained a number of wider benefits by adopting a holistic approach. Despite several barriers, the ongoing program continues to show measureable successes on all its key performance indicators.

1 INTRODUCTION

Occupational road safety is an emerging issue, of significance for both road and occupational safety in many countries including the USA and UK (*1*), New Zealand (*2*), France (*3*) and Australia (*4*).

Despite this, many researchers (eg *5, 6*) have identified that, with the exception of Salminem (*7, 8*), there are no recent well evaluated, published, case studies of organisations that have effectively managed their occupational road safety. Most researchers still cite, and base recommendations on, the Swedish Televerket study (*9*) undertaken in the mid 1980s.

The aim of this paper is therefore to help close an important gap in the research literature, by developing and evaluating an effective process for improving occupational road safety. This is addressed by describing Wolseley, a company which has invested time and resources in road safety over the last four years, based on research and experience from around the world. The following sections apply a chronological case study based approach similar to that described by Robson (*10*) to briefly describe Wolseley, the process applied to review, benchmark and manage its occupational road safety, project implementation, project outcomes evaluation and ongoing steps. Finally, the paper seeks to identify some lessons learned for other organisations, researchers and policy makers worldwide.

2 BACKGROUND TO WOLSELEY

Wolseley is the world's largest heating and plumbing distributor to the professional market and a leading supplier of building materials. It has operations in 28 countries with over 5,000 branches, 75,000 employees and £16 billion of annual revenues. This includes 16,000 people in the United Kingdom (UK), of whom over 7,000 drive as part of their work, using one of 3,000 commercial vehicles and 3,000 company cars, or claiming mileage expenses for driving their own vehicle on work business. Most of the 16,000 employees also commute to work by road.

In 2004, the company appointed a new Safety Health and Environmental (SHE) Manager in the UK, with a background in the transport industry. Driving was identified as the biggest injury risk facing

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the company, and members of the public with whom it comes into contact. Having identified the problem, a process was implemented, based in-part on the WIPE fleet safety model (*11*).

3 WIPE FLEET SAFETY MODEL

This model was developed by incorporating a series of case studies from around the world (*11*), along with a wide range of safety theories, which were synthesised and integrated into the four-stage organisational level fleet safety process framework shown in Figure 1. Wolseley is one of a number of organisations that have used the model to structure their fleet safety program in recent years.
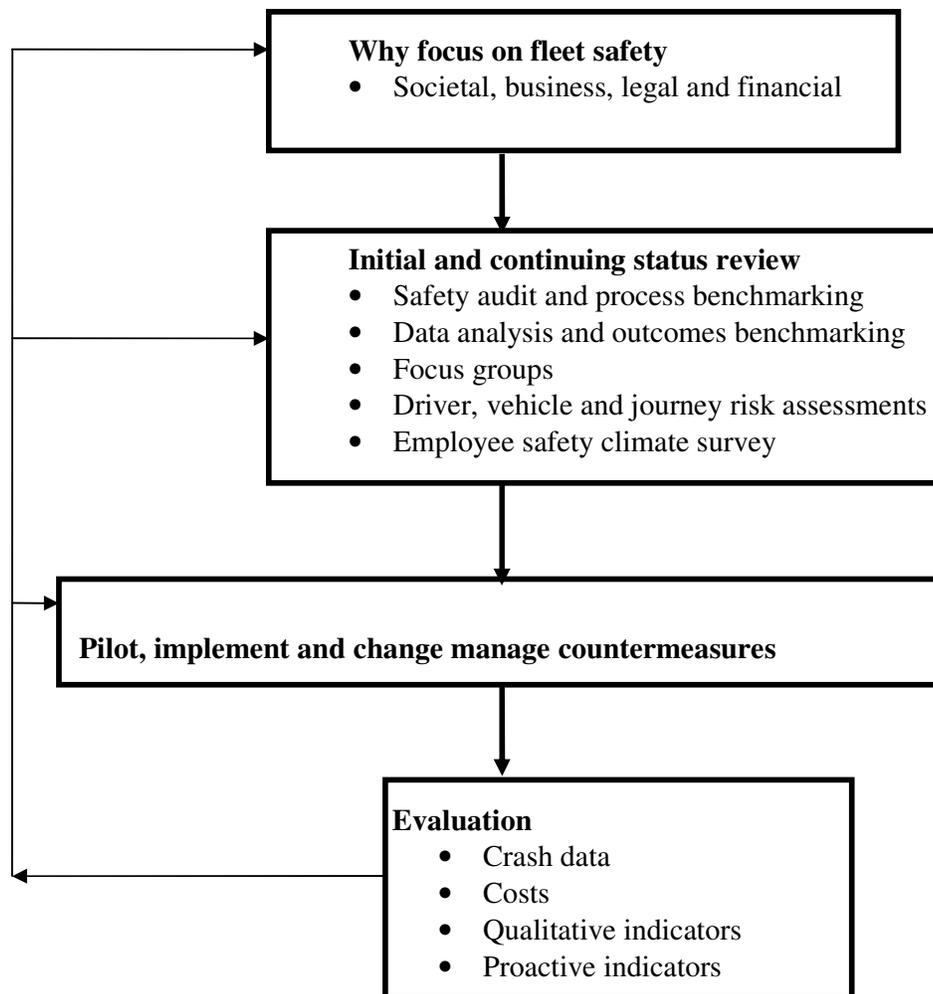
Why focus on fleet safety
- Societal, business, legal and financial

Initial and continuing status review
- Safety audit and process benchmarking
- Data analysis and outcomes benchmarking
- Focus groups
- Driver, vehicle and journey risk assessments
- Employee safety climate survey

Pilot, implement and change manage countermeasures

Evaluation
- Crash data
- Costs
- Qualitative indicators
- Proactive indicators

FIGURE 1 The WIPE fleet safety process model

Identifying the societal, business, legal and financial reasons to focus on fleet safety is an important starting point, providing a business case for organisations and individual managers.

Once the business case has been made, the next step is to gain a detailed understanding of the current situation within the organisation. A safety audit and analysis of insurance claims data allows the extent and full costs and causes of the problem to be understood. Employee risk assessment and focus groups allow a consultation and involvement process to be developed, as well as gaining an understanding of people's perception of the safety culture and practices within the organisation.

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The Haddon Matrix (*12, 13*) has been identified (*14*) and adapted (*11, 15, 16, 17*) as a useful and holistic framework for classifying fleet safety countermeasures to be piloted, implemented and change-managed (Figure 2). Previous unpublished case suggested that undertaking pilot studies at one site, or with one team of employees, help evaluate the effectiveness of a program, make appropriate cost trade-offs and develop the process for wider implementation.

	Management culture	Journey	Road/site environment	People	Vehicle	Society/community
Pre-crash or pre-drive	Business case Safety Audit Policy and procedures Safety climate tools Management structure Board level champion SHE or quality-led SHE committee Safety pledge Contractor standards	Travel surveys Purpose Need to travel Modal choice Journey planning and route selection Shifts/working time Fatigue management	Risk assessments Guidelines Site layouts Road improvement	Select Recruit Induct Handbook Assess Train Encourage Equip Communicate Driving pledge Monitor Correct	Selection Specification Safety features Standards Maintenance Checking Black box to monitor	Marketing program Family members program Community involvement Safety groups Road Safety Week Conference circuit Media/outreach Safety awards Benchmarking Regulator briefings and involvement Corporate Social Responsibility (CSR)
At scene	Emergency support to driver	-	Manage scene	Known process to manage scene	Crashworthy Black box to capture data	Escalation process
Post-crash	Report, record, investigate and evaluate Change management	Debrief and review	Investigate and improve	Driver debrief Counselling & support Reassess/train	Investigate black box data Vehicle inspection & repair	Manage reputation and community learning process

FIGURE 2 Summary of countermeasures in the extended Haddon Matrix framework

The final stage of the WIPE model is 'Evaluation', reviewing program outcomes to show its impact, traditionally based on a range of after the event crash, financial and softer qualitative key performance indicators (KPIs). In the case described, proactive, or before the event process indicators have also been applied.

4 THE WOLSELEY OCCUPATIONAL ROAD SAFETY PROGRAM

The following sections provide a case study of Wolseley, and how, over the last four years, it has implemented many of the elements of WIPE (Figure 1) and the Haddon (Figure 2) models. It is not based on a planned scientific study or methodology, but an evolving process and series of key steps (Figure 3), adopting Robson's chronological structure approach (*10*) to writing up applied case studies. The material presented is based on research, project management, industry good practice and maximising opportunities to improve road safety as they arise within an organisation.

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Date	Actions
2004	Baseline fleet safety audit undertaken by insurer leads to number of recommendations (Figure 4) Fleet Safety Steering Group (FSSG) set up to implement audit recommendations New SHE Manager identifies fleet safety as biggest risk faced by company
2005	Moral, Legal and Financial business case developed to engage board (Figure 5) Fleet Safety Policy Statement launched (see *20*) Fleet Safety Action Plan developed Car and Commercial vehicle driver handbooks developed (*20*) Driver Risk Assessment trial implemented with FSSG and safety team Fleet benchmarking with other organisations (www.fleetsafetybenchmarking.net) Detailed insurance claims analysis undertaken to target risks (Figure 6) Quarterly Commercial Vehicle Driver Newsletter launched
2006	Driver Pledge, Policy, Risk Assessment and monitoring program launched Further fleet audits undertaken by insurer to review progress (Figure 4) Driver focus groups undertaken Wolseley wins external recognition from Brake and Prince Michael Road Safety awards, based on program described, and reductions in 'collisions per vehicle' and costs Car, Truck and Insurance sub-groups established Uses Road Safety Week to focus on young drivers by engaging graduates Health and safety training courses for line managers amended to include fleet Free eye sight checks offered to all Commercial Vehicle Drivers Commercial fleet vehicle safety features reviewed and improved (Figure 7) More detailed monthly reports developed on collision data Safe Driver of the Year Competition launched for commercial drivers
2007	Safe Driver of the Year Competition opened to all commercial and car drivers Mandatory driver risk assessment at company car renewal process launched Receives external recognition form Brake and RoSPA due to breadth of program and collisions per vehicle continuing to fall Safety climate outcomes from Driver Risk Assessment identify further opportunities Drug, Alcohol and Corrective action policies consulted on and developed Uses Road Safety Week to engages managers and suppliers in developing community road safety initiatives 1,000[th] Driver completes risk assessment and monitoring program Car driver Newsletter launched Drug and alcohol awareness campaign and amnesty period introduced For cause drug and alcohol policy and program implemented company wide Invited to share knowledge with others at several industry good practice events
2008 and beyond	Fleet safety policy, Driver handbooks and Car policy reviewed and updated Safe Driver of the Year Competition planned for all commercial, car and FLT drivers Continued external recognition including being invited speakers at industry conferences, further awards and becoming a Driving for Better Business project champion Detailed one to one benchmarking undertaken with several external organisations Targeted countermeasures plan developed for high, medium and low risk drivers Further development of collision data to allow businesses to target risks HR processes reviewed to further engrain safety into day to day activities Long term evaluation data shows continued falls in collisions per vehicle (Figure 8) and financial improvements (Figure 9) Two non-fault road fatalities involving commercial vehicles, show robustness of systems and support the need to continue enhancing the program Focus on risk management of Grey Fleet (people driving their own vehicle for work) as part of company car review Continued use of Road Safety Week to engage managers and suppliers, as part of CSR initiative (*21*) Post Collision Investigation/Review Call trial and implementation External insurer audits engrained as bi-annual process Driver Risk Assessment, Licence Check and Indexing process further expanded Random Drug and Alcohol testing program introduced across company Fleet safety beginning to be formally linked to green/Environmental agenda

FIGURE 3 Timeline for the Wolseley fleet safety program

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4.1 2004

The starting point for the current Wolseley program was 2004, when a fleet safety audit (Figure 4) undertaken by the company's insurer identified a number of gaps in road safety policy, in-part brought about by a period of rapid growth through acquisition. The audit set a baseline for benchmarking processes, both internally and against industry best practice, led to recommendations covering safety policy, driver risk assessment and management process, which were taken up by a newly appointed SHE Manager. Fleet safety was identified as the biggest risk of asset damage and human harm faced by the company. One of the first initiatives was to take over the running of the newly formed Fleet Safety Steering Group (FSSG), set up to implement the audit recommendations. Since that time, the insurer audit has become a bi-annual process, designed to be an independent external review of performance. This is reflected in Figure 4, which shows that based on the percentage successful audit compliance, the company benchmarked below the 'All fleet' industry average on all indicators except recruitment in 2004. By 2006 it had significantly improved, to be above the industry average on 13 of the 14 indicators.

Area of fleet safety	Wolseley % 2004	Wolseley % 2006	All fleets %
Fleet safety policy	39	84	73
OHS policy and risk assessment	47	78	68
Legal compliance	60	88	76
Organisational leadership/culture	48	81	72
Journey/mobility planning	62	72	77
Driver recruitment/induction	74	86	70
Driver management	61	80	65
Driver wellbeing	42	73	62
Vehicle management	58	83	76
Claims reporting/investigation	43	69	64
Community involvement	36	82	46
Reversing	49	70	64
Cash for cars	60	80	62
Agency drivers	50	60	73
Overall	53	78	68

FIGURE 4 Fleet audit outcomes

On all the 14 indicators covered in Figure 4, and overall, Wolseley has shown clear improvement in the policies and procedures that the FSSG has implemented. The group, set up to implement the initial audit recommendations, aims to reduce the number of collisions experienced each year. It meets quarterly, and includes senior management, managers from health and safety, transport, operations and fleet. It also has many influential external participants including: fleet insurer, insurance broker, fleet leasing company, accident management company and risk management advisor. It is seen as a key group for identifying effective collision reduction programs, proposing fleet safety policies to Wolseley's leadership team, making the appropriate business case, helping to imbed new initiatives and overcoming any barriers to progress.

4.2 2005

In theory (Figures 1 and 2) and in practice (Figure 3) making a strong business case to the board was an important early step, both to engage senior managers and secure funding and leadership for the program. To achieve this, the moral, business, legal and financial case was clearly set out. Morally, it is widely accepted that driving in the UK is one of the biggest risks that most people face, and company data identified that it was a major cause of both asset damage and human harm. Legally, a range of safety and health, transport and corporate regulations were identified as key

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reasons to improve fleet safety, not least the joint Health and Safety Executive/Department for Transport guidance on Work-related road safety (*18*). These moral and legal arguments were supported by financial data that showed the impact of collisions on company profitability. The model in Figure 5 uses a single broken wing mirror as an example. It reveals the average cost per incident and the assumed hidden cost multiplier of three times the vehicle repair cost. This includes vehicle downtime, driving to the repair workshop, administration and lost sales opportunities (*19*). The company makes a return on sales profit margin of 8%, and Figure 5 shows the revenue, and product sales required to pay for a damaged mirror. If this is related to the company's total third party collision costs, it equates to £155,000,000 of revenue required to be generated to pay for the collisions or 19,106,834 bags of cement sold.

Cost item	Wing mirror
Average repair cost	£185
Hidden cost multiplier	3
Hidden costs	£555
Total cost	£740
Return on sales profit margin	8%
Sales required	£9,250
Bags of Wolseley 'extra rapid' cement @ £8.12	1,140

FIGURE 5 Fleet safety cost model

When presented to the board these moral, legal and cost arguments made a compelling case for senior managers to engage with fleet safety, and for initial financial investment to target collision prevention. Thanks to this business case work, senior management from board level down is engaged in fleet safety. This has evolved to include: reviewing the monthly board report, engaging with the SHE Manager on a regular basis, signing off and reviewing the Fleet Safety Policy, signing the company's safe driving pledge, undertaking the driver risk assessment program, attending the quarterly FSSG meetings whenever possible, endorsing the company's driver handbooks and leading by example in their day to day travel management. Since that time several insurance, vehicle asset and training-led risk financing models have also been implemented to allow the program to be effectively implemented and sustained.

Guided by the models in Figures 1 and 2, the FSSG quickly developed and implemented a Fleet Safety Policy Statement (*20*). This was incorporated into the wider Health and Safety Manual, and a Fleet Safety Action Plan, which set out the steps that should be taken over the next 12 months. Since that time, the policy and plan have been reviewed annually and widely communicated. The policy helps to demonstrate the company's commitment to ensuring the safety of its employees while driving for work. The annual review process ensures it remains accurate and allows continual improvements to be made.

The main actions during 2005 included preparing, consulting on and launching both car and commercial vehicle driver handbooks (*20*), a driver risk assessment trial implemented initially amongst the group members and fleet safety benchmarking with other organisations, including being a founder member of a government supported program (www.fleetsafetybenchmarking.net). The benchmarking was important for several reasons, but particularly to set a baseline, gain ideas from other organisations and set targets for improvement based in industry standards and against peers in the industry. Undertaking detailed insurance claims analysis allowed an understanding of the current situation and specific risks to be targeted. This identified a third party collision rate of 0.6 per vehicle per annum, and the types of collisions shown sorted by cost in Figure 6. For example, Wolseley drivers hitting the rear of the vehicle in front involved 6.4% of all collisions, but 23% of costs.

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Collision type	% of total collisions	% of total costs
Insured Hit Rear Of third party (TP)	6.4%	23.0%
Hit Parked Third Party	17.0%	11.8%
Hit Pedestrian/Cyclist	0.3%	7.2%
Insured Reversing/Manoeuvring	7.6%	6.5%
Hit Third Party Property	13.4%	6.4%
Insured Across TP Path	1.1%	6.3%
Third Party Action	11.0%	5.7%
Insured Changing Lanes/Turning	2.9%	5.4%
Other	9.8%	3.8%
Fwd Hit rear TP/Concertina	0.8%	2.6%
Concertina	0.4%	2.3%
TP Fault - all causes	3.2%	1.8%
Reverse Hit TP Vehicle	2.3%	1.5%
Narrow Road Collision	1.5%	1.5%
Insured Pulled Out Of Junction	0.5%	1.4%
All other	21%	13%

FIGURE 6 Initial collision analysis

From this position, having the fleet audit results, collision data, benchmarks and initial risk assessment trial data, the steering group was able to target key risks through its policy, action plan, driver handbooks, line manager training and a newly launched quarterly commercial vehicle driver newsletter (later followed by a company car version). The car and commercial handbooks outline the drivers' responsibility to act in a safe manner at all times when driving for work purposes. They also provide guidance to help keep them and their family safe when driving out of work time. The newsletters aim to raise awareness of current hot topics relating to fleet management, vehicle maintenance, road safety and good practice. Regular safety alerts are also issued to all Wolseley locations following the occurrence of a serious incident. This process ensures that effective safety communication is established, increases the awareness of all staff across the company and means that control measures are implemented to help prevent recurrences of similar incidents. Additional information and guidance is also made available on the Company intranet site on a regular basis. All these communication channels have helped raise awareness of road safety, and highlighted how seriously it is treated by the company.

4.3 2006

One of the first steps undertaken in 2006 was to consult the workforce via two commercial vehicle driver focus groups, which were undertaken to identify key issues at the operational level. These sessions identified that the company is perceived as highly safety conscious, but that several areas of opportunity existed, particularly:

- Vehicle suitability - newer, better specified, fleet required.
- Security of loads.
- Improved driver induction and training.

Overall, although some participants used the exercise to 'have a good moan', which the authors have also experienced in several similar cases, the focus groups identified a range of practical operational ideas for improvement, many of which have since been piloted or implemented. The improved vehicle specification described in Figure 7 is a good example.

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Based on the outcomes of the focus groups and driver risk assessment trial, a more detailed online assessment program, which included an in-built safety climate survey, was launched in early 2006. It was initially targeted at 500 company car and 500 commercial drivers and included:

- A Safe Driving Pledge asking participants to sign 'do the right thing' when driving.
- A policy awareness check.
- A Risk Assessment based on the participant's exposure, attitude, behaviour, knowledge and hazard perception.

The policy awareness check aimed to ensure that drivers understood and complied with the company's handbooks, policies and procedures. Wolseley was one of the UK's early adopters of this approach, which aimed to turn its written rules into custom and practice.

The driver risk assessments provided detailed management information, to which actual collision data is added on a monthly basis. This allows both proactive (assessment) and reactive (collision) driver level outcomes to be monitored, and non-compliant participants to be targeted. Based on the first 417 company participants, evaluation data showed a relationship between the assessment results and the drivers' self-reported collision outcomes. This provided confidence that assessment could be used to target appropriate countermeasures to risks. More detailed analysis showed that 6% of drivers were identified as High risk, 84% Medium, and 10% Low. The program is currently being implemented for all employees who drive as part of their work, including a 'Permit to Drive' process for company car drivers at new car handover. Commercial drivers are targeted initially 'along the lines of least resistance' via business safety champions and proactive regional or brand managers.

A further company wide fleet safety audit was undertaken by Wolseley's insurer to review progress. Figure 4 shows that the company had improved from worse than to above the industry average, on 13 of the 14 sections of the 400 question audit. Several mini-audits were also undertaken in specific parts of the business, particularly focusing on separate issues for the car and commercial fleets. These independent measures of success helped with setting, refining, developing, reviewing, evaluating and improving policies, procedures and processes.

Along with reductions in 'collisions per vehicle' the audit data presented in Figure 4 formed a key element of the outcomes evaluation for successful Brake and Prince Michael Road Safety awards received during 2006. This external recognition was important, as it helped to gain continuing senior management support and investment, and to motivate participating managers to continue. In-part led by the Haddon Matrix in Figure 2, other external or community based initiatives saw Wolseley embrace Road Safety Week for the first time, particularly focusing on young drivers by engaging graduates in its safety program. Wolseley was also invited to speak at several external events, including the Brake Best of the Best road safety conference (22). This fitted well with its community, branding and CSR objectives, all of which are important to the organisation (21).

Continued progress in 2006 saw the formation of car, truck and insurance sub-groups of the FSSG, to focus on these specific areas in detail. To engage and empower local participation, the company Health and Safety training course for location and operations managers was amended to include fleet safety. A Safe Driver of the Year Competition was launched for all commercial drivers. An initial online quiz, supported by analysis of collision histories, violations and manager feedback was used to identify 20 participants for the finals day. This led to several positive outcomes, including driver and family member engagement, plus some excellent communications material to promote road safety. As well as the competition, and a drug and alcohol program, the employee wellbeing was also focused on by providing free eye sight checks for all commercial vehicle drivers. In the driver risk assessment program one in four drivers stated that they had not received an eye test in the last two years. It was also suspected that deteriorating eyesight could be a contributing factor in some of the slow speed manoeuvring and reversing collisions involving

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vehicles operating in confined spaces. Wolseley now offers free eyesight screening to all commercial drivers and pays towards the first pair if any corrective glasses are required.

As well as driver safety, the company's transport manager has focused attention on reviewing and improving commercial fleet vehicle safety. Several examples are listed in Figure 7 which shows that, in line with the suggestions in the Haddon Matrix above, developing safer vehicles has played a part in the program.

Trialled rear view camera with sound, and later specified on all new vehicles, to eliminate the blind spot missed by standard mirrors
Upgraded front axle rated capacity to increase tolerance and reduce risk of over loading. Additional operational benefits include more even braking, better weight distribution, easier to operate, reduced maintenance costs and overall safer vehicles
Upgraded engine power on artic/tractor units to improve driveability and fuel efficiency
Automated gearboxes specified on new vehicles to improve driver comfort and aid fuel efficiency
Body, cranes and chassis specification rationalised for consistent quality, more effective training and more flexible fleet utilisation
Access steps fitted to vehicles to allow safe and easy access to load area
New front and rear view mirrors added to vehicles above 7.5tonnes to increase field of vision and comply with new legislation
A frames specified on vehicles to facilitate easier access for coupling of trailers and minimise damage caused to air and electric couplings
Crane/Loader remote control devices implemented as standard to allow operator more control, security and full field of vision for loading and unloading products. This enables operator, other road users and load protection to be fully maximised. Removing the Crane-based control levers, linkages and rods has also reduced weight and operator maintenance time, and eliminated all passer-by temptation to 'tamper and experiment' with the levers
Several other vehicle-based crane safety features adopted: including flashing beacon lights interlocked to operation, over height warning and legs not stowed operator aids, hydraulic beam non return valve and high visibility hydraulic cylinders

FIGURE 7 Wolseley commercial vehicle safety specification, features and enhancements

4.4 2007

During 2007 the program continued to become much more mature, with many of the initiatives described above becoming embedded in custom and practice, or being further developed. For example, the Safe Driver of the Year Competition was opened to all commercial and car drivers, including a much more sophisticated finals day and communications program. The driver risk assessment became a mandatory process at the time of vehicle collection or renewal for all company car drivers. At the same time, utilisation of the assessment's safety climate outcomes report helped to identify further opportunities to target risks, at individuals and groups of drivers. This included consulting on drug, alcohol and corrective action policies, the development and introduction of a drug and alcohol awareness campaign and amnesty period, and later the implementation of a company wide 'for cause' drug and alcohol policy and program.

Having established the policies, procedures and processes described, Wolseley increasingly began to focus on the Community elements of the Haddon Matrix (Figure 2). As a key element of its CSR (*21*), every opportunity is taken internally and externally to promote road safety, and many initiatives have engaged people at work and in the local community. Internal and external communications via as many channels as possible includes internet and intranet, driver newsletters, handbooks, team briefings and media releases.

The company is aware that many collisions happen close to home within the communities in which it operates, and its employees and families live. This means that the more it can do for road

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safety locally, the better for the company from both a brand and a safety performance perspective. This external focus was reflected in the fact that the company is invited to speak at many industry good practice events, conferences and workshops (see for example *22, 23, 24*). It also received Brake and RoSPA awards during 2007 for the breadth of the programs described and because it's collisions per vehicle continued to fall. Community wise, the company embraced National Road Safety Week in the UK in 2007, by engaging its managers and suppliers in developing the following initiatives.

- To demonstrate its commitment to road safety for employees and local communities, the company sponsored two giant National Road Safety Week banners (Figure 8). These were placed in prominent locations in its two UK head office towns.

FIGURE 8 Road Safety Week 2007 banners

- Five workshops, based on Brake/Department for Transport material, were undertaken at a local school to raise awareness of road safety with over 200 children.
- Six head office-based road safety awareness workshops were attended by over 50 employees from various company locations and job roles including location managers, operations managers, fleet/transport teams and graduate managers to allow them to raise fleet safety awareness amongst their teams.
- A meeting of Wolseley's FSSG was purposefully coincided with Road Safety Week.
- In conjunction with Wolseley's car supplier, tyre and windscreen checks were undertaken on more than 400 vehicles parked at the company head offices. Five immediate prohibitions were issued, mostly regarding illegal or unsafe tyres that needed to be changed.
- The company's transport manager retrofitted 'Cyclist Beware' decals (Figure 9) to the rear of all commercial vehicles in the fleet to act as a visual reminder to cyclists to avoid travelling 'down the inside', and as a reminder to drivers to be aware of cyclists.

FIGURE 9 Wolseley cycling decals fitted to all commercial vehicles

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- The regular Essential Safety Theme communication topic for that month, which runs across all business locations, focused on road safety. The Essential Safety Pack consists of poster campaigns, briefing notes and checklists. Managers and employees must sign to acknowledge that they have understood the key messages.
- The company invited its entire first year graduate intake to participate in the online driver risk assessment program. As graduates are a young high risk driver group, and have been recruited specifically to be the managers of the future, they are seen as a particularly important target group for Road Safety Week.
- One regional manager wrote to all staff members personally with a road safety information leaflet on vulnerable road users. All the region's branch managers were circulated with road safety information posters for their location.
- Various articles around National Road Safety Week were circulated in the Company 'Connections' magazine, to the external trade press and local media.

Evaluations undertaken by the Road Safety Week organisers showed that the company had been one of the most proactive of all participants.

4.5 2008

Despite the slowing down of the UK housing market and economy having a major impact on the company, the program has continued during 2008, with the FSSG initially focusing on reviewing progress against the original fleet safety policy and project plan. This review process is important because it helps bring both documents to life, allows the company to take stock of progress and identifies ways to improve the policy and plan on an ongoing basis. It also helps to identify the strengths, weaknesses, opportunities and threats to the program – and ensure that any barriers to success are identified and worked around. As part of this process, the fleet safety policy, driver handbooks and car policy have all been updated, further development of the company's use of its collision data has been undertaken to allow it to target risks more precisely. To support this, the countermeasures plan continues to evolve for drivers deemed to be high, medium and low risk based on their assessment results, collisions, licence violations and other observed behaviours.

The FSSG and various sub-groups have focused increasing attention on collision investigation and the application of any lessons learned during 2008. All major incidents are escalated to the board immediately. For smaller, more frequent collisions that may not require such a detailed investigation, a post collision review call is under trial, in-part based on the Department for Transport's recent Commercial Vehicle Incident Recording project (*25*). Depending on the results of the trial, the process is likely to be implemented across the organisation. The claims review sub-committee meets quarterly and focuses on the collision data, and reviewing large, long term and stand-out claims. At the most recent meeting, the focus was particularly on fraudulent claims, and how to cope with the increasing problem of the 'SLAM-ON', where criminal gangs cause or stage collisions with commercial vehicles to engineer large insurance payouts. Two major outstanding claims involving cyclists were also under discussion, making the cycling decals initiative shown in Figure 9 particularly timely. The FSSG has also implemented an online collision analysis system, which allows it to drill down into the detail of individual collisions, and to identify key trend data. These collision investigation and data led processes have helped targeted countermeasures, and aided the data collection, reporting and recording process itself to be substantially improved. This was confirmed when two separate non-fault road fatalities involving the company's commercial vehicles helped shows the robustness of their systems, including reporting, investigation, driver care, corrective action and rehabilitation, but also the need to continue enhancing the program.

A range of other initiatives have also been started or further developed during 2008. The Safe Driver of the Year Competition has been expanded and opened up to all commercial, car and fork lift truck drivers. Human resource policies and processes, particularly around company cars and

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corrective action, have been reviewed to help further engrain safety into day to day custom and practice. This includes more focus on risk management of the company's grey fleet (people driving their own vehicle for work) as part of a company car fleet review. A random drug and alcohol testing program has been introduced across the company as a follow on to the policy and for cause testing previously implemented. The driver risk assessment program has continued to expand, supported by the planning of an electronic licence check program direct with the Driver and Vehicle Licensing Agency (DVLA).

As the long term evaluation data described below shows, and despite some setbacks, the program has continued to achieve many milestones: including ongoing falls in collisions per vehicle (Figure 10), financial improvements (Figure 11), further external recognition though invitations to speak at industry conferences, awards from RoSPA and Brake and being invited to become a Driving for Better Business project champion in a government backed program. Also externally, detailed one to one benchmarking continued to be undertaken with several external organisations, and the company has again targeted Road Safety Week to engage managers and suppliers.

4.6 Outcomes Evaluation

Evaluation against a number proactive and reactive or pre and post event indicators has been a key element of the program over the last four years. In their internal and external presentations, the company mentions the following benefits from investing in road safety:

- Brand enhancement and protection.
- Less injuries, collisions and lost work days.
- Increased employee welfare and engagement across the business.
- Significant cost savings.
- Consistent and timely external and internal reporting.
- Improved risk management.
- Internal operational control.
- Improved performance management.
- Improved compliance management.
- Support expanding operations, and more recently cut costs during downturn.
- Achieve operational excellence.
- Ensure legal compliance.

Some of these are quantifiable, others less so. Overall, there are four key pieces of quantifiable evaluation data available to measure the success of the program described.

1. Fleet safety audit results.
2. Insurance loss ratio data based on third party collisions per vehicle.
3. Uninsured loss recovery.
4. External recognition.

These are described below.

4.6.1   Fleet safety audit results

Independent outcomes from bi-annual insurer-undertaken fleet audits (Figure 4) show the company's progress over time and against the wider industry, with clear improvements in the policies, processes and procedures the FSSG has implemented under all 14 audit headings, from a

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standing start in 2004. Overall, the company's compliance increased from 53% to 78%, against an all fleet average of 68%.

4.6.2 Collisions per vehicle per annum

Collision ratios are the most commonly used indicator of corporate road safety performance (*25*). Figure 10 illustrates Wolseley's performance improvement during the four years of the program. This data, based on insurance loss ratios from third party motor claims, indicates the improvement in road safety performance against exposure. The fleet size has doubled over the last few years, and the proportion of vehicles involved in a third party collision each year has reduced from 65% to 35%. This equates to approximately 1,000 collisions avoided per annum. Cost data is not presented, as it can take many years for the true cost of a fleet claim to be finalised making the most recent costs artificially low, and is seen as too commercially sensitive to publish. Preliminary analysis of insurance data, however, suggests that the average claim cost per vehicle is falling, at the same time that the average cost per claim is increasing. Overall, annual insurance premiums have decreased by a five-figure sum since 2004.
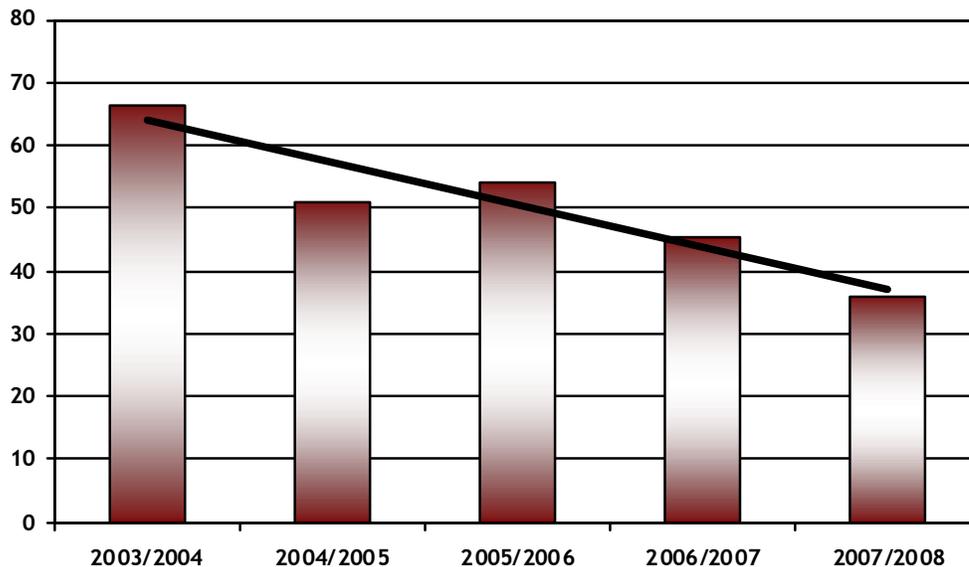

FIGURE 10 Reductions in third party collisions per vehicle

4.6.3 Uninsured loss recovery

As a positive outcome of the FSSG, an opportunity to raise the profile of unrecovered losses associated with incidents caused by third parties has led to an increase in the amount of monies recovered by the commercial and car fleet teams. Figure 11 indicates the monthly and total recoveries from this process. To date, over £500,000 has been recovered, which has in-part been used to help fund the safety program.
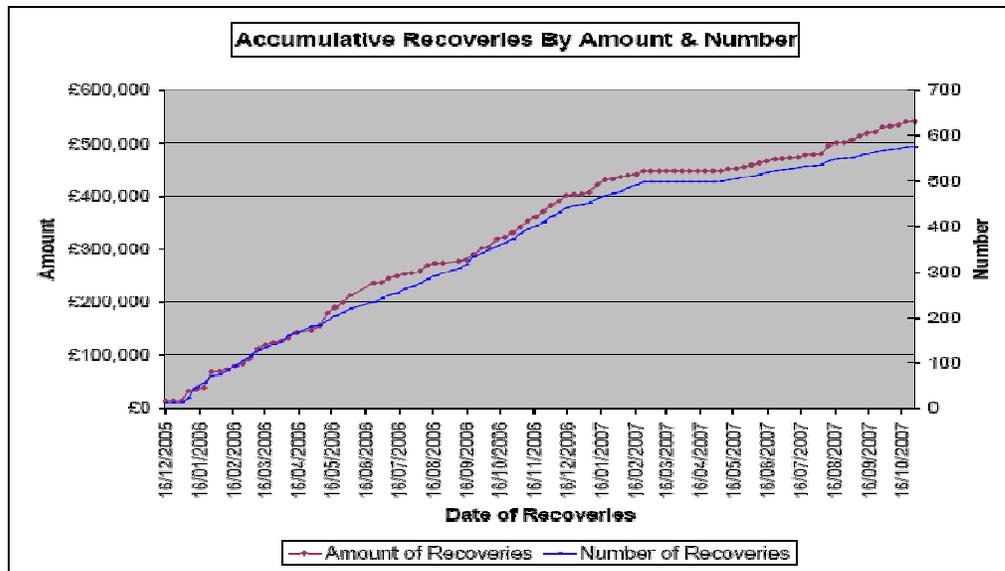
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FIGURE 11 Uninsured loss recovery

4.6.4 External recognition

The recognition the company has received from external agencies described throughout the paper is an important indicator of success, judged by its peers and industry experts. Such recognition also helps energise and sustain the program further, and engages the board and senior managers to continue investing time and resources in road safety.

5 LESSONS FOR RESEARCH, INDUSTRY AND POLICY MAKERS

Overall, the program can be seen to have been a success on a number of levels, but particularly with regards to road safety processes and outcomes. The influence of both the WIPE (Figure 1) and Haddon (Figure 2) models can be identified throughout the case. The 'why' elements of the model help make the financial (Figure 5) and wider business case. The audit (Figure 4), collision analysis (Figure 6), risk assessment trials and focus groups formed the 'initial and ongoing status review'. Many of the organisational, management, vehicle driver and community based initiatives identified in the Haddon Matrix were 'pilot-tested' before full implementation. 'Evaluation', based on process audits (Figure 4), collision data (Figure 10), costs (Figure 11) and external recognition, is also evident.

A potential limitation or criticism of this type of holistic program rests in the fact that it is difficult to identify the likely impact of each individual countermeasure. Despite this, however, recent research on occupational road safety (eg see *26, 11, 27*), and worldwide experience over many years suggests that there are no 'golden, silver or even bronze' bullets. Instead, combinations of cultural, management, driver, vehicle and journey, as well as societal, based factors are important.

The process described provides many important lessons that researchers, and managers in other organisations worldwide, can learn from. These were highlighted by Gallemore (*22*) in the context of positive and negative management characteristics with regards to road safety, and are summarised in Figure 12. They are seen as critical for organisations seeking to develop such a progam, and key area for management development.

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Positive Characteristics	Negative Characteristics
Engaged – with process, people and operations	Lack of Engagement
Excellent Communications	Lack of Training and Knowledge
Awareness of Processes and Standards	Lack of Standards
Accountability - Zero Tolerance	Puts Profit and Loss before Safety
Good Documented Processes	Manages from Behind desk
"Want to" V's "Have to" - passion for safety	Agrees to actions and then does nothing
Perceives Safety as a Value	No Confidence or control
Excellent Standards - Housekeeping	No accountability
Receptive to Change	Only Manages upwardly
Proactive – Thinks out of the Box	Attitude – Safety is not a core value
Usage of Resources. (Safety Team)	Does not set culture or expectations
Regular Communications with All Levels	Lacks balance
Performance Focused	Antagonistic towards safety
Well Respected by Subordinates & Peers	Not Receptive to Change

FIGURE 12 Positive and negative management characteristics

What Figure 12 suggests is that the attitude and aptitude of managers in organisations, either positive or negative, are vital to the success or otherwise of a fleet safety program. In every case the authors have been involved in over many years, committed management champions at all levels have been vital in overcoming the many potential barriers that exist to improving safety. Typically these are individuals who have identified the problem, and engaged the organisation and their colleagues to assess the risks and overcome the barriers to develop targeted safety programs.

In addition to the characteristics given in Figure 12, Gallemore (28) has also discussed in detail what can be seen as the key success factors. He summarised these as follows:

- The need for visible commitment from the top down.
- An enthusiastic fleet safety champion.
- Consistent implementation across all locations.
- A cross functional steering group able to engage fleet providers.
- Accountability and ownership at all Levels.
- Regular communication and awareness training.
- Setting and maintenance of high level of expectations.
- Measuring and reviewing performance by business and region.
- Implementing of both proactive and reactive incentives.
- Audit compliance.

Wolseley's success is felt to have been based on a number of factors, not least its ongoing desire to develop the program further. Key elements of this are the drive towards continual improvement, regular process and outcomes benchmarking against others and the identification of gaps requiring improvement. New angles to push the road safety message are also constantly being identified, most recently for example by linking with other important issues such as the green agenda (29) and reducing costs/improving efficiency during times of recession.

The case also offers lessons for policy makers, suggesting that occupational road safety is an opportunity to target a large number of drivers through the workplace. Many authors cited throughout this paper (including 1, 2, 3, and 4) have recommended how this could be undertaken at both policy and organisational levels.

One particular area for policy makers to explore is the potential of fleet auditing and benchmarking as a method of improving safety outcomes. The case supports previous research (30) which suggests that auditing and benchmarking can provide policy makers with an

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opportunity to further enhance road safety. Examples of successful programs in Europe (29) and the United States (31) are already available, and could easily be explored further by policy makers.

6 CONCLUSIONS

The paper has applied a chronological case study approach (*10*), aimed at addressing an important gap in the research literature and industry practice. It has developed and evaluated an effective process for improving occupational road safety. This was undertaken through a case study of Wolseley, a company that has invested time and resources in a program over a four year period based on worldwide research and experience.

The paper has provided frameworks for aiding research, in the form of the WIPE and Haddon models, and turned them into applied practice to inform real world, practical situations based on a combination of sound science and experience. It has also highlighted many of the key success factors, lessons and potential barriers from which others can learn and seek to emulate. Although not without some limitations, the case has identified pointers for researchers, practitioners and policy makers, and provides a model for turning research on occupational road safety into practice.

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