



# Measuring fleet safety performance and development of a fleet safety management audit tool

Never Stand Still

Science

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TARS RESEARCH

# Work-related crashes and fleet safety

- Vehicle crashes largest cause of work-related fatalities (Safe Work Australia, 2013)
- Many more injuries & vehicle damage - estimated 20-30% fleet vehicles crash annually (Haworth et al, 2000)
- High financial cost (e.g. NSW 2008-09: \$22.3 million for workers & \$83.9 million for commuters) (WorkCover NSW, 2010)
- Fleet vehicle crash costs estimated to account for 13-15% of all fleet spending (Haworth et al, 2000)
- Measuring fleet safety performance focused on: crashes, casualties & costs



# Fleet safety performance – measuring outcomes

- Measuring outcomes - traditional focus e.g.
  - fleet vehicle at-fault crash rate
  - fleet vehicle repair costs
  - fleet vehicle insurance premium costs
  - traffic infringements
  - LTIFR
  - workers' compensation costs
  - first aid injury rate



# Measuring outcomes for fleet safety – the strengths

- Strengths:
  - relatively easy to collect
  - easily understood
  - linked with fleet safety performance
  - widely used as a measure of fleet safety performance
  - comparisons across industries & within enterprises can be conducted



# Measuring outcomes for fleet safety – the limitations

- Limitations:
  - valuable when outcome indicators are high, but meaningless when the indicators are low
  - may involve under-reporting e.g. near-misses
  - can measure injury/damage, not necessarily the potential seriousness of the crash
  - can be influenced by changes in management practices

# Other ways to measure fleet safety performance

- Process, positive or lead performance indicators
  - focus on the management of fleet safety
  - monitor the processes which should produce good fleet safety outcomes – e.g. vehicle selection; vehicle maintenance; training; safety audits
  - highlight areas where systems & procedures can be improved



# Process performance indicators used elsewhere e.g. rugby league

- % of off loads after tackles
- % handling errors while in possession
- completion rate of sets of six
- % time in possession of ball
- number of hit-ups
- player confidence



# Measuring process performance indicators for fleet safety – the strengths

- Strengths:
  - timely identification of poor performance
  - ‘what gets measured gets done’
  - may act as a driver for performance improvement
  - are pro-active: measure control, prevention
  - detailed information can be collected





# Measuring process performance indicators for fleet safety – the limitations

- Limitations:
  - may not be easily measured
  - could be time-consuming to collect
  - may be difficult to compare for benchmarking purposes, if companies are using different indicators
  - relationship between process indicators & outcome indicators in fleet safety is not known

# Relationship between outcome and process performance indicators e.g. Australia Post

- Developed a set of process indicators to measure OHS performance
- Monitored performance in 500 facilities in NSW
- Identified relationships between:
  - induction training & reduced MH injury rate
  - risk assessments & fewer slips, trips & falls
  - increase in the number of OHS issues raised in team briefings & reduced injury rate

# Measuring process indicators for fleet safety using a fleet safety management audit tool

- Process performance indicators for fleet safety
- Need a consistent way to measure performance for fleet safety across companies/industries
- Focus on light vehicle fleets (i.e. cars and vans less than 4.5 tonnes)
- Identify the extent fleet safety is managed using best practice techniques – self audit
- Provide an indicator of progress in managing fleet safety
- Benchmark performance with other companies

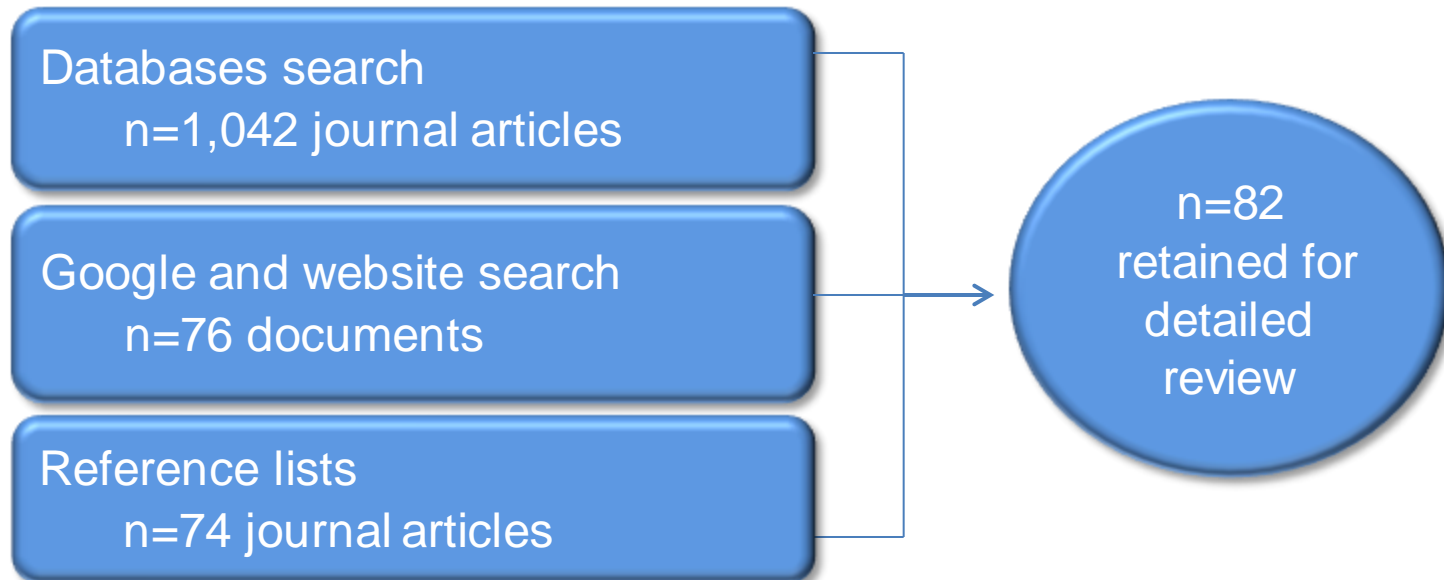


# Method: development of the fleet safety management audit tool

Four stages:

## 1) Literature review

- Identify best practices in light vehicle fleet safety management



# Method: development of the fleet safety management audit tool

## 2) Questionnaires and semi-structured interviews with fleet managers and drivers

- 15 fleet managers and 21 drivers recruited from Australasian Fleet Management Association (AfMA) members
- Information about their fleet
- Experience with fleet safety management practices
- Fleet safety practices that had reduced/increased crashes, injuries or near-misses
- Sample of current industry knowledge



# Method: development of the fleet safety management audit tool

## 3) Developed a draft of the audit tool

- evidence from research literature
- information from interviews
- objective criteria to assess performance

## 4) Usability trial

- 5 organisations trialled the draft audit tool
- usability survey – language clarity; coverage; ease of use; potential usefulness



# Fleet safety management audit tool

<b>Main categories</b>	<b>Sub-categories</b>
1. Management, systems and processes	1.1 Management commitment 1.2 Fleet safety management 1.3 Communication regarding fleet safety
2. Monitoring and assessment	2.1 Monitoring fleet safety performance 2.2 Vehicle crash and incident investigation 2.3 Performance monitoring and recognition
3. Employee recruitment, training and education	3.1 Driver selection and assessment 3.2 Employee fleet safety induction 3.3 Driver training
4. Vehicle technology, selection and maintenance	4.1 Fleet vehicle selection 4.2 Fleet vehicle maintenance
5. Vehicle journeys	5.1 Journey management

# Fleet safety management audit tool

- Each sub-category has 4 levels with criteria to indicate if company is:
  - **Level I** – performing at high standard
  - **Level II** – performing well, but room for improvement
  - **Level III** – performing OK, but considerable room for improvement
  - **Level IV** – performing poorly
- Company rates its performance based on strategic and operational criteria provided for each of the 4 levels





## e.g. 1.1 Management commitment (I: high performing)

Level	Strategic criteria	Operational criteria
I	<p>A. Management commitment is formally required and assessed for fleet safety management and/or performance. This occurs across management levels.</p> <p>B. Management accountabilities are linked to fleet safety management and/or performance objectives.</p> <p>C. There is recognition by management of the need to allocate resources specifically to fleet safety management and to commit adequate resources.</p>	<p><b>A. All levels of management</b> (executive, senior &amp; middle management &amp; front line supervisors) have documented responsibilities &amp; performance criteria specifically for fleet safety management.</p> <p><b>B. There is a system in place</b> to assess fleet safety management and/or performance against performance agreements or statements of responsibility.</p> <p><b>C. Dedicated and sufficient resources</b> are allocated to manage fleet safety.</p>

## e.g. 1.1 Management commitment (II: performing well)

Level	Strategic criteria	Operational criteria
II	<p>A. Management commitment is formally required and assessed for some management levels for fleet safety management and/or performance.</p> <p>B. Some management accountabilities are linked to fleet safety management and/or performance objectives.</p> <p>C. There is recognition by management of the need to allocate resources specifically to fleet safety management.</p>	<p><b>A. Some, but not all levels of management</b> (executive, senior &amp; middle management &amp; front line supervisors) have documented responsibilities &amp; performance criteria specifically for fleet safety management.</p> <p><b>B. There is a system in place</b> to assess fleet safety management and/or performance against performance agreements or statements of responsibility.</p> <p><b>C. Some resources are allocated</b> specifically to manage fleet safety, but not all requests are funded.</p>



## e.g. 1.1 Management commitment (III: performing OK)

Level	Strategic criteria	Operational criteria
III	<p>A. Management commitment is limited to front line supervisors or middle management and is not assessed for fleet safety management and/or performance.</p> <p>B. No front line supervisor or middle management accountabilities are linked to fleet safety management and/or performance objectives.</p> <p>C. There is recognition by management of the need to allocate resources specifically to fleet safety management.</p>	<p><b>A. Front line supervisors or middle management are responsible</b> for fleet safety management.</p> <p>B. There is <b>no a system in place</b> to assess fleet safety management and/or performance against performance agreements or statements of responsibility.</p> <p><b>C. Resources allocated to manage fleet safety are embedded within other program budgets</b> so that there is competition for funds.</p>

## e.g. 1.1 Management commitment (IV: poor performing)

Level	Strategic criteria	Operational criteria
IV	<p>A. Management commitment is not demonstrated for fleet safety management and/or performance.</p> <p>B. No management accountabilities are linked to fleet safety management and/or performance objectives.</p> <p>C. Management allocate no, or limited, resources to fleet safety management.</p>	<p>A. There are <b>no documented responsibilities</b> regarding fleet safety management and/or performance.</p> <p>B. There is <b>no system in place</b> to assess fleet safety management and/or performance against performance agreements or statements of responsibility.</p> <p>C. <b>No, or minimal, resources are allocated</b> to manage fleet safety in the organisation. If resources are allocated, these tend to be embedded within other program budgets.</p>

# Fleet safety management audit tool - scoring

Categories	Rating				
	I	II	III	IV	
<b>1.Management, systems and processes</b>					
1.1 Management commitment	3	2	1	0	
1.2 Fleet safety management	3	2	1	0	
1.3 Communication regarding fleet safety	3	2	1	0	
<b>2. Monitoring and assessment</b>					
2.1 Vehicle crash and incident investigation	3	2	1	0	
2.2 Monitoring fleet safety performance	3	2	1	0	
2.3 Performance monitoring and recognition	3	2	1	0	
<b>3. Employee recruitment, training and education</b>					
3.1 Driver selection and assessment	3	2	1	0	
3.2 Employee fleet safety induction	3	2	1	0	
3.3 Driver training	3	2	1	0	
<b>4. Vehicle technology, selection and maintenance</b>					
4.1 Fleet vehicle selection	3	2	1	0	
4.2 Fleet vehicle maintenance	3	2	1	0	
<b>5. Vehicle journeys</b>					
5.1 Journey management	3	2	1	0	<b>TOTAL</b>
<b>Sub total</b>					

TOTAL SCORE	0-7	8-14	15-21	22-28	29-36
PERFORMANCE	Poor	Well below best practice	Below best practice	Approaching best practice	Achieving best practice

# What's next?

- Fleet safety management audit tool to be included on the Australasian Fleet Management Association website
- Ability for organisations to upload self-audit and outcome results – anonymous
- Determine if audit results (process performance indicators) are reflective of fleet safety outcome performance
- Need industry input for ongoing tool refinement



# Conclusion

- Collecting information will not improve performance
- Using the audit tool will provide organisations with information on the strengths/ limitations of their current fleet safety management
- Insights as to how to improve fleet safety management and performance
- Copy of audit tool:
  - Mitchell et al. Initial development of a practical safety audit tool to assess fleet safety management practices. *Accident Analysis and Prevention*. 2012, 47:102-118.



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