Fleet Forum

Innovative Strategies for the Road Ahead

Fleet Forum Toolkit
Managing Crash Reporting & Analysis

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Preface

Fleet Forum aims to achieve a visionary change in the way the aid and development sector manages work-related road risk. This will be achieved by:

- Improving fleet safety management through design and distribution of tools;
- Addressing the safety imbalance in the aid and development sector, emphasising that road safety is as important as programme delivery and cost efficiency;
- Encouraging wider adoption of best practice throughout the aid and development sector by sharing best-in-class examples and working to embed a new cultural norm.

Fleet Forum has developed the Humanitarian Fleet Management Standards, a common standard for use by the aid and development sector. These Standards provide a framework that, among other objectives, enables ownership in managing road risk, which can be adhered to in a consistent way by fleet operators.

Many of the tools described in this toolkit can be found in the Fleet Forum Knowledge Centre at https://knowledge.fleetforum.org.

Acknowledgements

The Fleet Forum Toolkit: Managing Crash Reporting & Analysis has been developed in collaboration with sector stakeholders. The expert contributions made from organisations and individuals who were consulted in the development of this toolkit are gratefully acknowledged.

Fleet Forum wishes to extend its gratitude to the UPS Foundation, who made this project possible, and to Construction Logistics and Community Safety (CLOCS) for allowing us to use their source material.

The toolkit will be reviewed at two-year intervals, and any amendments arising from its review will be published in an amended version.

Users are responsible for the correct application of the information provided in this guide.

Terminology

The Fleet Forum Toolkit: Managing Crash Reporting & Analysis uses definitions of common terms that have been negotiated internationally, drawn from the UNECE Glossary of Transport Statistics (4th ed, 2009), the World Report on Road Traffic Injury Prevention (WHO and World Bank, 2004) and the Humanitarian Fleet Management Standards.

In the requirements found in the Humanitarian Fleet Management Standards:

- Shall: indicates something that is mandatory as part of the requirement, or in order to achieve the requirement
- Should: indicates something that is recommended as emerging practice
- May: indicates permission or an emerging practice option

Driver: A staff member (or individual contracted by the organisation) whose function involves driving a vehicle for work-related purposes.

Fatal crash: A road traffic crash in which at least one person is killed, either immediately or within 30 days of the crash due to injuries sustained in the crash.

Fleet operator: An organisation, or part thereof, that operates one or more vehicle(s).

Good catch: Recognition of an event or circumstance that had the potential to cause an incident or substantial company or employee loss, but which did not occur due to a corrective action and/ or other timely intervention following the recognition.

Injury: Physical damage that results when a human body is suddenly and/ or briefly subjected to intolerable levels of energy. It can be a bodily lesion resulting from acute exposure to excessive energy or impairment of function resulting from lack of vital elements.

Killed: A human casualty who dies within 30 days after a collision due to injuries received in the crash.

Near miss: An unplanned event that didn't result in injury, illness or damage but that had the potential to do so.

Reporting tool: A reporting and alert tool that allows users to easily capture, log, report, analyse and compare incidents, investigate crashes and identify lessons learned, and assess road safety performance and the effectiveness of road crash interventions.

Road traffic crash: A collision or incident involving at least one vehicle in motion, on a public road or private road to which the public has right of access. It also includes crashes that happen on compounds or other confined areas in which aid and development organisations operate and to which the public has no access (for example: office compounds, refugee camps, etc.). Included are: crashes between road vehicles; between vehicles and pedestrians; between vehicles and animals or fixed obstacles; with one road vehicle alone; and crashes between road and rail vehicles. Multi-vehicle crashes are counted as only one crash provided that any successive crashes happen within a very short time period.

Road traffic injury (or casualty): A person who has sustained physical damage (i.e., injury) as a result of a road traffic crash.

Subcontracted fleet: A business practice where an organisation hires additional fleet companies or subcontractors to meet its transport demand. The contracting organisation is still in charge and must oversee hires to ensure that safety (and other) standards are adhered to.

Toolbox Talk: A short briefing or presentation to staff.

Vehicle: A road motor vehicle fitted with an engine providing its sole means of propulsion, which is normally used for carrying persons or goods, or for drawing, on the road, vehicles used for the carriage of persons or goods.

Vulnerable road user: Primarily a pedestrian, cyclist, motorcyclist or person of reduced mobility.

Introduction

The Fleet Forum Humanitarian Fleet Management Standards

The Humanitarian Fleet Management Standards, a project funded by the UPS Foundation, were developed to support organisations to manage and operate their fleet against a set of quality standards in the areas of cost efficiency, programme effectiveness, safety and environmental impact. The standards were developed based on good practices from a cross-section of fleet-operating organisations and adapted to the aid and development context.

Most aid and development organisations are dependent on road transport to deliver their programme objectives, including moving staff and delivering material assistance. That transport, however, contributes substantially to the risks faced by aid workers.

Road traffic crashes are, in fact, the leading cause of death and serious injury to humanitarian staff. Their vehicle fleet operations also present road safety-related risk to other road users in the same populations they seek to serve.

Through the Humanitarian Fleet Management Standards, Fleet Forum is engaged in developing a proactive, forward-looking approach to road safety, and aims to change the way the aid and development sector manages work-related road risk. It plans to achieve this change through adoption of the Standards and by:

- Encouraging and facilitating the aid and development sector to adopt wider road safety good practices from all sectors
- Improving road safety management through design, development and distribution of appropriate tools
- Increasing the awareness of road safety risk and ensuring road safety is considered as important as programme delivery and cost efficiency.

This approach is aligned with and supports the objectives of the Road Safety Strategy for the United Nations System and its Personnel (UNRSS).

UN Road Safety Strategy

In an effort to address its road risks, the United Nations has developed a UN-wide strategy. Entitled the Road Safety Strategy for the United Nations System and its Personnel (UNRSS), it aims to reduce the level of road traffic fatalities and injuries caused by UN and partner vehicles by managing the interaction between speed, vehicles, road infrastructure and road user behaviour in a holistic way.

The UNRSS includes an Action Plan to realise these objectives that is built on these five pillars:

Crash Reporting

To reduce and prevent road crashes, it is essential to understand the scale and underlying causes of the problem. The only way to do that is through effective and complete road crash reporting and analysis.

Crash reporting is included in the UNRSS Action Plan under Pillar 1 (Road Safety Management), which lists the specific activities required to strengthen road crash reporting practice.

The Importance of Crash Reporting & Analysis

Investing your time in reporting and analysing road traffic crashes is key to learning from past events and avoiding repeated events in the future. Fleet operating organisations must know the reasons behind its crashes and be able to identify gaps in its safety management system that may be inadvertently causing crashes or near misses.

The benefits to investing in crash reporting and analysis include:

- The ability to demonstrate commitment to health and safety to staff and to the wider public.
- Reduced costs associated with crashes and property damage.
- Implementing risk management controls that can prevent future crashes.

Road Safety Strategy for the United Nations System and its Personnel

Action Plan Pillar 1- Improving road safety management

Vehicle crash data play a vital role in the identification of road safety problems, selection of countermeasures, and evaluation of the effectiveness of the related policy, programmes and interventions. There is an absolute requirement for the collection of system-wide reliable vehicle crash data.

Action 1.3: Improve the collection and management of system-wide road crash data

Strengthen the reporting and recording of vehicle crashes across the system as follows:

- Develop a standard crash reporting form based on the agreed taxonomy; Develop a standard investigative and/or fact-finding protocol and procedure;
- Establish a centralized road crash database, by either amending the SSIRS or developing a new, simple online/application-based reporting tool under the responsibility of UNDSS; and
- Develop Standard Operating Procedures for reporting, recording and managing vehicle crashes and establish a chain of responsibility to achieve strong compliance with the requirements in line with each organization's Occupational Health and Safety Strategy and the duty of care for the individuals involved in the crash.
- Conduct periodic crash analyses and continuously inform all involved organizations about road safety situations as well as the actions taken and the results.
- Establish a lesson-learned mechanism providing evidence-based information to support training and awareness campaigns.

How to do Crash Report and Analysis well

Crash reporting and analysis describes the processes and techniques to ensure road traffic crashes and near misses are reported and analysed. As it is a continuous process, it's key that an organisation uses every opportunity to learn.

Crash reporting and analysis is done well when an organisation:

- Clearly sets out what is expected of employees and what they, in turn, can expect from the organisation in terms of reporting and analysing.
- Has a policy and procedures that support crash reporting and analysis.
- Provides employees with regular feedback and communication on outcomes of crash analysis, including interventions put in place.
- Ensures that employees have appropriate training in crash reporting and analysis.
- Has performance management processes that are well communicated and effective, including performance indicators.
- Ensures that employees understand the importance of, and feel responsible for, reporting crashes.

Fleet Forum Humanitarian Fleet Management Standards – Safety: Crash Reporting

The Fleet Forum Humanitarian Fleet Management Standards – Safety is designed to be used by the aid and development sector as a best practice benchmark to determine an organisation's level of performance. It provides a framework that, among other objectives, enables organisations to adhere to road risk management in a consistent way.

The Standards are divided into three levels, based on good practice [2]:

- **Basic**: The minimum quality standards that an organisation should have in place to be compliant with good practice.
- **Advanced:** A commitment to become safer, greener, cost efficient and effective.
- **Professional:** Standards that aim to a high quality of fleet management and continuous improvement.

[2] | Implementing the Humanitarian Fleet Management Standards by Fleet Forum

Table 1.1 Humanitarian Fleet Standards – Safety: Crash Reporting and Analysis.

This table provides an overview of the standards related to crash reporting and analysis:

Humanitarian Fleet Management Standards – Safety: Crash Analysis			
	Requirement	**Purpose**	**Demonstration**
Basic Standard	Organisations shall ensure that all road crashes and incidents are recorded.	To ensure that all crashes and incidents are managed in a consistent manner and that evidence is captured.	Evidence of recorded road traffic crashes and incidents.
Advanced Standard	Organisations shall ensure that the reported road crashes and incidents are analysed and that corrective actions are implemented	To avoid similar crashes and incidents in the future.	Recorded evidence of the analysis and evidence of the content of the crash record being reviewed and (re)acted on.
Professional Standard	Organisations shall ensure that all crashes and near misses are reported, analysed and that corrective actions are implemented	To avoid crashes and incidents in the future	Evidence of recorded near misses and evidence of the content of the records being reviewed and (re)acted on.

Purpose of this toolkit

This toolkit is designed to help organisations meet the crash reporting and analysis requirements of the Humanitarian Fleet Management Standards and Action 1.3 in the UN Road Safety Strategy. It provides guidance on what to do following a crash; from actions the driver (or passenger) should take at the scene to investigating a crash and acting on lessons learned. It also emphasises the value of 'good catch' or 'near miss' reporting – a tool to help identify reasons for crashes before they happen.

Fleet Forum's Humanitarian Fleet Management Standards and the UN Road Safety Strategy require organisations to:

- Capture, investigate and analyse road traffic crash information that results in injury or damage to vehicles and property.
- Keep a log of all crashes, incidents and near misses, including details of evidence required to investigate an incident.
- Continuously inform involved organisations and stakeholders (including subcontractors) about road safety situations, any actions taken and the results.
- Establish a lessons-learned mechanism with remedial measures to help prevent reoccurrence of similar incidents.

This toolkit and the information, systems and tools it offers will help organisations to develop a new crash reporting policy or strengthen and review its existing policy. A sample crash reporting policy, template data collection and crash analysis and investigation forms are also provided.

This toolkit has been prepared in consultation with the insurance industry. The information-gathering forms have been developed to ensure that an organisation can also capture information needed for an insurance claim.

Who should use this toolkit?

This toolkit is designed for organisations that manage a vehicle fleet and that need to establish a crash reporting and analysis policy and supporting procedures. It is relevant for those responsible for reporting as well as investigating and analysing crashes.

Aid and development organisations will also find this document useful when providing guidance to their contractors.

How do I get started?

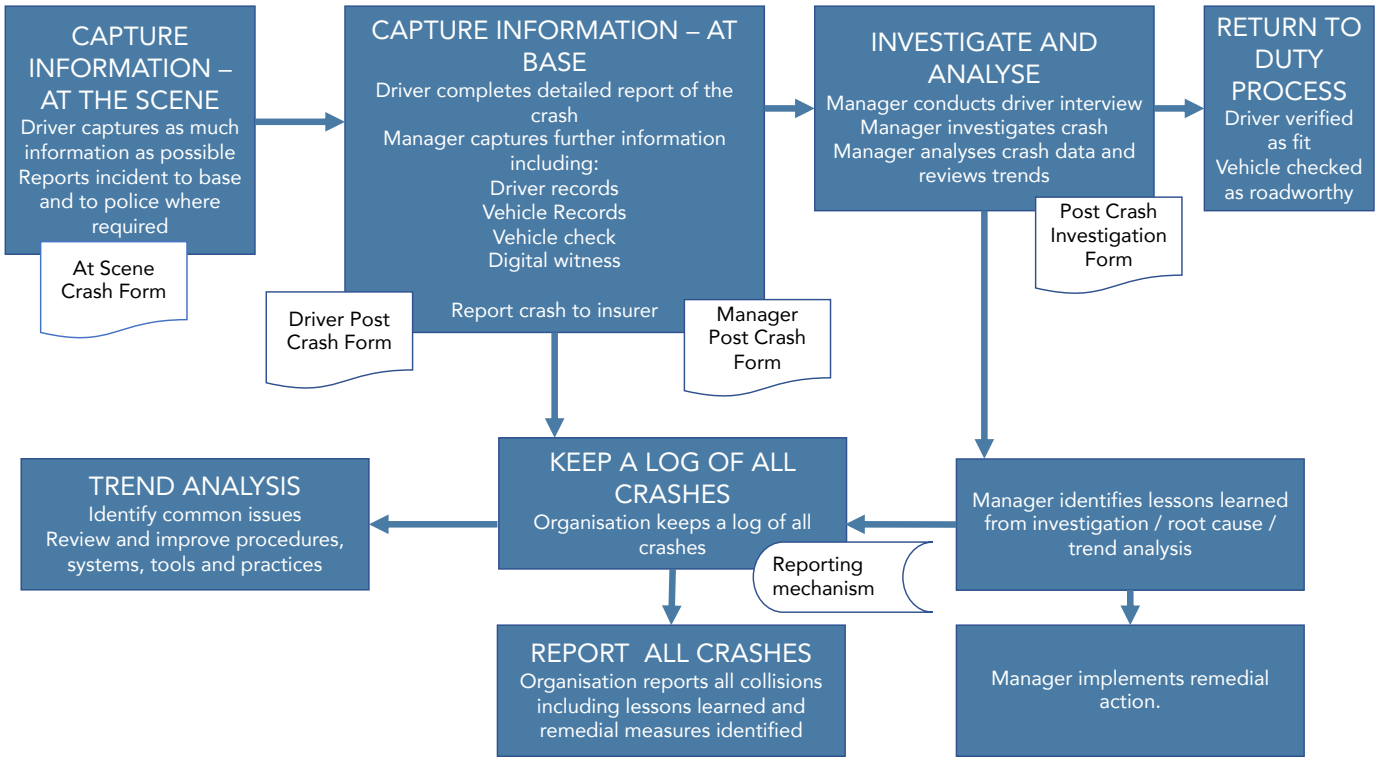
The first step is to identify if the organisation has road safety policies and procedures in place, and if it undertakes crash reporting today. The crash management and reporting flow chart (figure 1.1) illustrates what needs to happen in the event of a crash. The organisation should have a system or procedure in place that covers these steps.

The toolkit can help an organisation to strengthen its existing crash reporting procedures or implement new ones. It contains the following information:

Section 1: Preparing for crash reporting and analysis
This illustrates how to develop and implement a crash management policy

Section 2: Reporting a Crash
These are practical post-crash steps to capture and record data

Section 3: Crash Analysis
Use data collected to understand the root causes of the crash

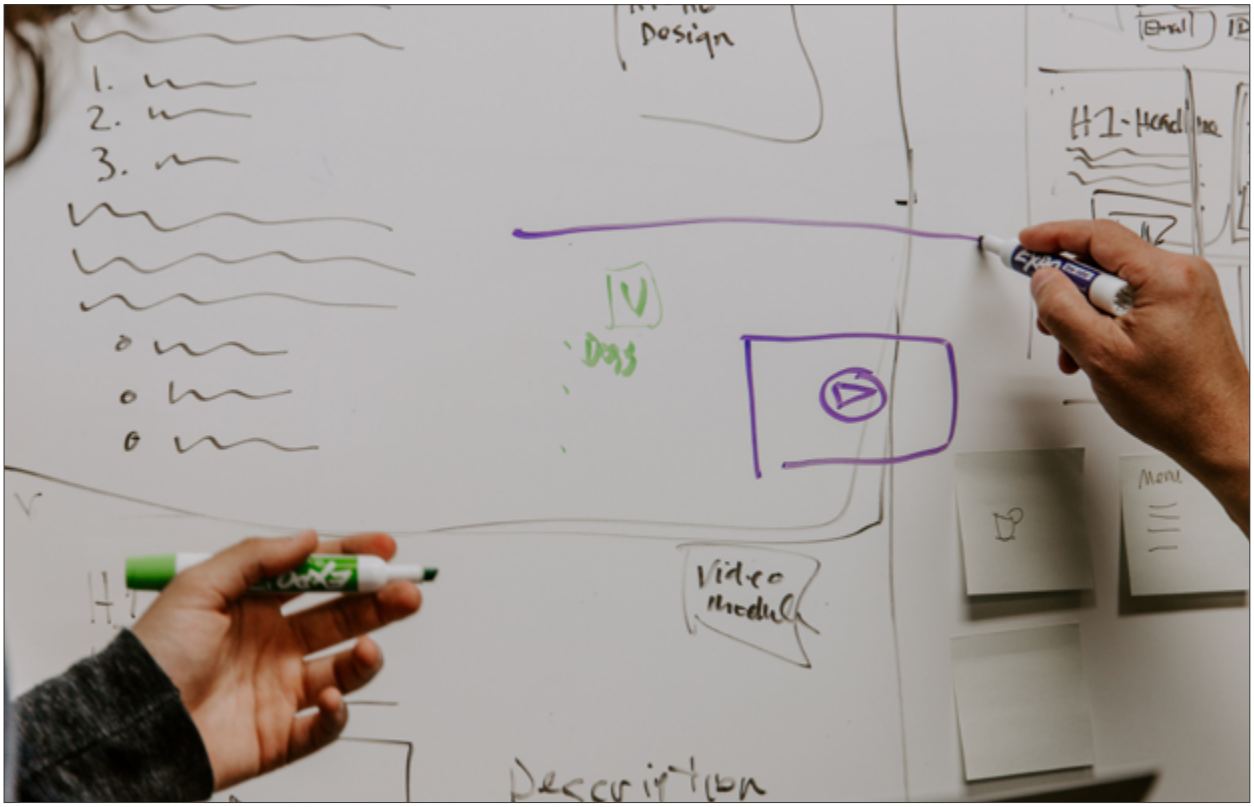


At a glance crash reporting and analysis requirements

The table below will help identify the relevant sections of this toolkit that outline the requirements for crash reporting.

Table 1.2: Navigating the key sections of the toolkit

What must I do to comply?	When must I do it?	Where do I look?
Report all crashes and near misses (or good catches) to your organisation	On a frequency as defined in your Crash Reporting Policy	Section 1
Capture, investigate and analyse road traffic crash information that results in injury or damage to vehicles and property	Each time a crash occurs	Section 2
Maintain a log of all crashes and near misses (or good catches)	The log shall be updated each time a crash occurs	Section 3
Learning from Incidents process	Ongoing	Section 3
Include lessons learned and remedial measures in reporting	On a frequency as defined at your management review meetings	Section 3



1. Preparing for crash reporting and analysis

1.1. Setting the foundation: A Crash Reporting and Analysis Policy

A robust Crash Reporting and Analysis Policy is vital to ensure that there are clear procedures on what to do following a crash, and ensure that:

- Employees know what to do in the event of a crash
- A quick and appropriate response is made to a crash
- A considered analysis of crashes is made to identify remedial actions, issues and trends.
- Your policy seeks to implement measures that:
  - Improve understanding of required post-crash actions.
  - Develop understanding of how crashes occur.
  - Reduce the number of crashes and incidents that occur.
  - Reduce severity of crashes when they do occur.

The policy should establish procedures from top-level management to supervisors, drivers and any other staff who need to be involved. Your procedures may be broken down into types of crash, such as minor, serious and major, with the appropriate people being included, such as medical, HR, legal and communications officers for a major crash with fatalities and injuries.

Your policy should also include reporting near misses, as this information can prove invaluable when investigating the likely cause of crashes. If the organisation's policy is not adhered to, there will need to be clearly set out sanctions in the policy document.

Use the example below to develop your own crash management policy statement.

Example of a Crash Reporting and Analysis Policy Statement:

<Insert organisation name> is committed to following robust procedures in the event of a crash involving one of its drivers or vehicles.

This policy is to ensure that <Insert organisations name>'s road traffic crash reporting and post-crash processes are documented and managed in a consistent way in order to reduce the number and severity of all vehicle crashes.

Managing risks associated with driving is the joint responsibility of senior management, operations, fleet management and driving staff. This policy applies to all staff responsible for any aspect of the post-crash process, training staff and all driving staff. This policy applies to all vehicle operations including <Insert organisation name>'s owned, rented and subcontracted transport.

If a vehicle is involved in a road traffic crash it is essential that the procedures outlined in <Refer to attachments to this policy or manual containing procedures> of the Crash Management Policy are followed to ensure that:

- The crash is managed safely, legally and reported to the relevant authorities promptly.
- The incident facts are collated accurately and recorded correctly (including people involved and property damaged).
- Vehicular assets involved are repaired to a safe and legal state prior to being returned to the road.
- The well-being and competency of the driver involved are assessed to ensure the individual's abilities and fitness are of a standard to enable a return to driving duties.

Example of a Crash Reporting and Analysis Policy Statement:

- The incident is fully investigated to determine both primary and contributory factors that led to the crash.
- The incident facts are analysed to determine and implement any remedial actions that may prevent similar incidents occurring in the future.
- All incidents, including identified causes and remedial actions are recorded in <insert name system> and discussed at country management level on a monthly basis and at senior management level (HQ) at least twice a year.

This policy is a living document and as such will be updated on an ongoing basis.

<insert person name> is the person responsible for the maintenance of this policy, its communication and implementation.

Not adhering to this policy can lead to disciplinary actions including termination of contract.

1.2. Who is responsible for policy implementation?

Roles and responsibilities
Your Crash Reporting and Analysis Policy should set out the specific roles and responsibilities for:

- Senior management: Entrusted with a leadership role, senior management is responsible for overseeing that relevant staff can implement and adhere to the policy. An important responsibility is also to oversee if the identified recommendations for interventions are leading to a reduction in crashes.

- Crash analysis manager: Senior management will appoint an individual or unit to be in charge of the analysis. This responsibility can be assigned, for example, to the Occupational Health and Safety Manager, Field Safety and Security Manager or the (Enterprise) Risk Manager. The individual (or unit) must be able to conduct the crash analysis freely and without fear of reporting their conclusions and recommendations. It is not advised that someone with a direct link to staff members involved in a crash is analysing the cause of that crash.

- Transport manager: The transport manager (or equivalent role, such as fleet manager or operations manager) is responsible for ensuring that drivers understand what is expected of them in the event of a crash and, following the crash analysis, to implement any interventions (relevant for fleet management) to prevent similar crashes in future. This also applies to managers who supervise staff who are authorised to drive.

- Driver: In a road crash, the driver must ensure that all actions are conducted at the scene and that any reporting that is done is in line with the organisation's procedures. They should also support in post-crash fact-finding exercises to analyse the cause of the crash.

- Staff Member: In the event of a crash where the driver is incapacitated, the staff member travelling in the organisation's vehicle must ensure that all actions are conducted at the scene and that any reporting is done in line with the organisation's procedures. The staff member should also support post-crash fact-finding exercises to analyse the cause of the crash.

Specific procedures for managers and drivers to follow in the event of a crash should be established.

Included in this toolkit are:

- Actions for managers to follow in the event of a crash.
- Procedures for drivers (you might wish to include this in a Driver Handbook.)

1.3. Communicating your policy

If your crash reporting and data analysis policy is not communicated effectively, then it is unlikely that it will have the desired impact. Therefore, a robust communication strategy should be developed to ensure that everyone in your organisation is aware of the policy and its contents.

A vital part of communication is to emphasise that careful record keeping and analysis of crashes is part of the organisation's culture. This requires staff buy-in to be effective, so it's recommended to undertake regular communication activities and use every opportunity to communicate through all communications channels: personal talks, emails, social media channels, posters, newsletters, bulletin board, staff meetings, and Whatsapp messages.

Staff members, particularly drivers, are often reluctant to report crashes (especially near-misses) because of concerns about disciplinary action. Internal communication should help to address the fear and emphasise reporting the truth about a crash. This is vital to carrying out a thorough investigation and learning lessons. Informing staff about the importance of reporting crashes can change the perception of post-crash behaviour and actions.

An organisation's Drivers Handbook offers an opportunity to inform drivers of their obligations in the event of a crash.

1.3.1. Training and refreshing knowledge

In addition to communication activities, drivers and staff members should regularly receive training on what to do in the event of a crash, both in terms of actions required immediately after the crash as well as reporting.

There are various methods for achieving this:

Training: Activities that are formally undertaken to increase the knowledge, skills and competencies of staff to ensure that they are capable to perform their duties and tasks related to crash reporting and analysis.

Toolbox Talks: These short, more informal sessions aim to refresh existing knowledge or skills.

Included in this toolkit are:

- Several Toolbox Talks examples and suggestions on how to facilitate them.
- A section on a driver's responsibilities that can be included in a Driver Handbook.

2. Reporting a crash or a potentially unsafe situation

This section delves into the steps to report a road traffic crash or a potentially unsafe situation – the near misses or good catches (if your organisation has these programmes).

Included in this toolkit are:
Template forms for each stage of the reporting process, specifically:

- Driver At the Scene Report & Post-Crash Report
- Manager Post-Crash Report
- Post-Crash Investigation Report
- Near Miss Report

2.1. Capture information at the scene by the driver

Following a crash, there is much information that can be collected at the scene to inform post-crash actions and analysis. It is the responsibility of the driver and, where relevant, the passengers to collect this information.

Information should be collected as soon as possible to ensure it remains valuable and is not lost. It can then be used in conjunction with witness statements, a police report and driver interviews to populate a crash report. It will also aid the submission of any insurance claims following the crash.

The driver and any passengers should know what evidence to collect and when. Only after the crash scene is safe and any medical attention has been given, the driver should collect the following data for crashes that result in injury or damage to vehicles and/or property:

1. The names, addresses and telephone numbers of the other driver(s) and passenger(s), as well as the make, model, colour and registration number of the vehicle(s) they were travelling in.
2. The names, addresses and telephone numbers of all independent witnesses and any injured parties.
3. The name, number and station of any police officer who attended the scene.
4. The name, address and policy of the motor insurers for any other vehicle(s).
5. Details of the crash damage (and any unrelated existing damage) to the other driver's vehicle.
6. Details of vehicle(s) involved and any other property damage together with the respective positions of the vehicles after the crash.
7. If possible, drivers should take photographs and/or videos (where it's safe to do so) of the crash scene from a number of different positions and include the vehicles, the scene itself, any damage to vehicles or property and any other details. This could be done using a camera or a mobile phone.

At the scene the driver should complete the appropriate form. They may use forms:

- Developed by the organisation
- Provided by insurance companies or agents
- Provided in this toolkit

Included in this toolkit are:

- A template 'At Scene Crash Report Form' to be issued to drivers to help them collect information at the scene.

- A Toolbox Talk example to help explain to drivers and passengers about the type of information they are required to capture in the event of a crash.

2.2. Completing the Driver Post-Crash Report Form at the base

After information has been collected at the scene, the vehicle(s) have been removed and any immediate organisational requirements have been met, the driver (or whoever has responded at the scene) should return to the duty station and report the crash in full.

A post-crash report form should be completed by the driver independently within a maximum of 24 hours of a crash. It should describe the crash from the driver's perspective and be included in the crash file for the purposes of investigation. The driver should be encouraged to include as much information in the 'Driver's statement' section as possible.

Included in this toolkit are:

- A template 'Driver Post-Crash Report Form' to be completed by drivers.
- A Toolbox Talk to discuss the importance of post-crash reporting by drivers.

2.3. Capturing information by the transport manager

The transport manager should start to collate and record information about the crash using the Manager Post-Crash Report Form. It should be completed within 24 hours of the crash. It should describe the crash from the organisation's point of view and include details of the incident, the relevant driver/ vehicle details, an assessment of the damage to all parties involved, and any evidence collected.

The purpose of the form is to document as much about the crash as possible, not to determine how or why it happened or where liability lies. Those conclusions are drawn during the investigation phase. Any contradictions or discrepancies in the driver's account that cannot be resolved should be documented and reviewed in the investigation phase.

Included in this toolkit are:

- A template 'Manager Post-Crash Report Form' to be completed by managers after a crash has been reported.

2.4. Log and record the crash

In addition to one's legal duties to report crashes and an insurer's requirements, the Humanitarian Fleet Management Standards and the UN Road Safety Strategy require an organisation to report all traffic crashes (involving owned, rented or subcontracted vehicles that result in injuries or damage to vehicles or property) using an approved reporting mechanism. Inputting your incidents into a Reporting Tool will allow you to produce reports and summaries and analyse trends.

The reporting forms identified in this toolkit do not alter any statutory responsibilities of notifying police. The police would expect you to release data to assist them in their investigation; failure to do so might constitute an offence of obstructing the course of justice.

Crash reports

A crash report will provide essential information for the crash investigation, as well as analysis and lessons learned. Each crash should have a separate file with its own documents, photographs and reports.

A crash report may be a series of individual documents that, together, provide the information needed for the logging, investigation, and analysis and reporting of a crash. The same information can be shared with an insurance company if a claim is made.

Table 2.1: Data that should be recorded following a crash

Data	Why it is important to collect this data
Incident type	Whether the incident resulted in a casualty, damage to vehicle only or near miss will inform the resultant actions required. Any crash could result in criminal proceedings if offences are disclosed or identified. All personal injury crashes, regardless of severity of injury, are likely to involve the police.
Incident date and time	This will enable an understanding of the times of year and day that incidents are occurring.
Location	This information is vital to enabling identification of any crash hotspots.
Was the crash on a prescribed route?	Did the driver deviate from the route set by the Transport Manager? If so, it may be that the route the driver selected was inappropriate for the vehicle they were driving. Was a prescribed route provided?
Road type	The type of road is an important consideration. If incidents are occurring on a particular type of road, (i.e., motorway) is specific training required?
Road condition	This will help identify if the road surface was a factor in the crash. Ice, oil or an uneven road surface can all cause a driver to lose control of a vehicle. A cyclist could be adversely affected by road conditions including potholes and slippery manhole covers.

Data	Why it is important to collect this data
Road features (i.e., bus or cycle lane, etc.)	A lack of segregated facilities requires vulnerable road users to share the carriageway with large vehicles. This may have been a factor in the crash/incident
Road hazards	Hazards on the road can result in a crash. These can include temporary road works or parked vehicles
Road speed limit	Speeding is often a factor in crashes. The speed the vehicle was travelling at should be collected, either from the driver, from on-board systems or the police (who can determine speed by marks left by braking)
Type of junction (if applicable)	If crashes are occurring at a particular type of junction, (such as a roundabout) are measures required to address this?
Signage	If there is a particular hazard at the location of the incident was this appropriately signed? If not, then drivers should be warned and it may be appropriate to contact the Local Highway Authority (or equivalent). This is why it is important to report missing or damaged signage; did this affect the crash?
Weather	Weather can significantly impair drivers' ability to operate their vehicle safely. It is vital, in order to develop an understanding of how a crash occurred, that data relating to the weather conditions at the time of the crash is noted
Vehicle details	Information related to the vehicle is vital when undertaking post- crash analysis. The age and body type of vehicles could affect the nature of a crash and its resultant impacts
Vehicle damage	Information relating to where vehicles were damaged as well as the cost implication help to understand the impact a crash has on your business.
Vehicle safety features	If there were safety features such as blind spot cameras or proximity sensors fitted to the vehicle this may have prevented a crash occurring. Were they working at the time of the crash?

Data	Why it is important to collect this data
Vehicle movement	A significant proportion of (motor)cyclist fatalities resulting from a crash with a vehicle occur when the vehicle is turning and the cyclist is in the vehicles' blind spot. In order to determine if the direction the vehicle was manoeuvring was a factor in the crash.
Driver details	Details of the driver are a critical element of any data collected. This could determine whether the driver is licensed to drive the type of vehicle they are operating, whether they require glasses and are wearing them and whether they were wearing a seatbelt.
Third-party involvement	Details on any other road users are vital in ensuring an understanding of how a crash occurred and the severity of any impacts. Vulnerable road users are often less visible and have less protection afforded to them. This means that a crash with a vehicle is more likely to result in a fatality or serious injury.
Causality and remedial actions	The individual tasked with investigating the crash should assess how they think the crash was caused (i.e., impairment or distraction) and what remedial actions should be put in place.

In addition to using the forms in this toolkit to collect and record information (set out in table 2.1) to create a crash report, an organisation may choose to record information electronically.

Time limits for reporting, investigating and analysing crashes

A crash reporting policy should outline time limits by which a crash should be reported and recorded to a relevant office. Clear roles and responsibilities should also identify who should be involved at each stage of the investigation and follow up.

Examples include:

When	Maximum time for action to be completed	Action
At scene immediately after a crash.	As soon as possible once immediate actions have been completed.	Driver reports to Transport Manager.
At base with information collected from the crash scene.	Recommended within 24 hours of incident and ideally prior to the end of shift.	Driver reports to Transport Manager.
Manager reviews evidence and determines what happened.	Recommended within 24 hours of the driver reporting the crash at base.	Transport Manager reports to Crash Investigation Manager / Team.
Information logged into a Reporting Tool.	Recommended within 72 hours of incident.	Transport Manager / Office support.
Information investigated, analysed and reported	As appropriate	Crash Investigation Manager / Team reports to Country Director
Identifying trends, measuring impact of remedial actions	Once a month	Senior Management Team discusses at country level
Reviewing global trends, measuring impact of remedial actions at global level	Twice a year	Global Directors discuss, led and initiated by CEO

3. Crash investigation and analysis

After a road crash, an organisation should investigate the causes. The emphasis should be on finding the root cause of the crash in order to prevent future crashes. The purpose is to find facts that can lead to corrective actions, not to find fault. The investigative team should search for root causes and not simply record the steps of the event.

This section provides guidance for those responsible for undertaking a crash investigation and analysing results to develop remedial actions and lessons learned.

Reasons to investigate a road traffic crash are to:

- Identify the cause of the crash and prevent a future crash.
- Fulfil any legal requirements.
- Determine the cost of the crash.
- Ensure compliance with applicable regulations (i.e., occupational health and safety, criminal, etc.).
- Process staff or third-party compensation claims.

The same principles apply to an inquiry of a minor incident and the formal investigation of a serious event. These steps can also be used to investigate any situation as a way to prevent a crash.

3.1.1. Who should do the investigation?

An investigation should, ideally, be conducted by someone (or a group of people) who is:

- Experienced in incident causation models
- Experienced in investigative techniques
- Knowledgeable about legal or organisational requirements
- Knowledgeable about occupational health and safety issues
- Knowledgeable about the work processes, procedures and persons for the particular situation
- Able to effectively use interview and other person-to-person techniques (such as mediation or conflict resolution)
- Knowledgeable about requirements for documents, records, and data collection
- Able to analyse the data gathered to determine findings and reach recommendations

Some jurisdictions require that a crash investigation be conducted with both management and labour (such as a staff council representative), or that the investigators be knowledgeable about the work processes involved.

Members of the team can include:

- Employees with knowledge of the work
- Supervisor of the area or work
- Safety officer
- Health and safety committee
- Union representative, if applicable
- Employees with experience in investigations
- External experts
- A representative from local government or police

3.1.2. Completing the Post-Crash Investigation Form

The Post-Crash Investigation Form should be completed by the road safety manager (or team) during a debriefing with the driver, the driver's supervisor and, if applicable, any passengers. The post-crash form aims to identify the causes of the crash and verify the facts as reported in the driver and manager post-crash forms. All evidence available should be present for the investigation.

The Post-Crash Investigation Form assists the road safety manager (or safety team) in determining the root cause of the crash, and identifying actions to be taken. All relevant information should be extracted from the data sources, including the following:

- Interviews with the driver, passengers and supervisors.
- Vehicle daily defect reports.
- Data downloads from on-board telematics systems.
- Mobile phone records (to verify if any distraction took place before the crash).
- Digital 'witness' data, such as on-board camera systems.
- Witness statements.
- Photos and videos taken at the scene.
- Police reports.

The investigation process should be guided by four key principles:

- Swift response: The incident should be investigated as soon as possible, while details are fresh and evidence is clear and available.
- Comprehensive analysis: The information gathered should provide a detailed and wide-ranging pool of data to analyse and draw conclusions.
- Accurate data: The information gathered should be high quality and accurate to ensure that weight can be placed on the conclusions drawn.
- Robust analysis: Effective collection of information and a focused investigation will allow for a reliable and comprehensive examination of individual incidents and broader trends over time.

3.1.3. Conducting driver and passenger interviews

During a crash investigation, a key source of information is interviews with the driver, any passenger(s) and the supervisor of the vehicle involved. It is important to balance the need to discuss the crash as soon as possible, while also recognising that the driver (or passenger) may be distressed and in need of support or professional counselling.

It is important to avoid placing blame for the crash. Rather than asking 'What did you do wrong?' or 'What went wrong here?', ask instead 'What happened?' The way the answer is framed can provide information: "All of a sudden..." may indicate that the driver was not paying full attention at the time of the crash.

Try to confirm the driver's version of events through a discussion with passengers or any witnesses to the crash. In the case of witnesses, this should be done quickly as they often disperse rapidly from the scene. Even if they are unwilling to offer their name, they may still provide information.

It is important to investigate all crashes to ensure that full and accurate information is presented to the insurer.

In addition to the interviews, it is key to inspect the vehicle and the road for any sign of damage or defect which may have caused or contributed to the crash. Recovery of the vehicle may destroy some evidence so it should be captured before recovery begins.

The vehicle telematics can play a key role in providing an 'unbiased witness' to any incident or claim. Telematics data can help to determine:

- Low impact and low severity crash claims (to determine the change in velocity for crash severity and injury causation).
- Failure to stop or yield at a junction.
- Potential mechanical failures, i.e., brakes, airbags, seatbelts, steering, tyres, etc.
- If a driver was driving in 'normal' fashion and/ or in line with the organisation driving policy
- If the driver was adhering to the 'drivers' hours' rules.

3.1.4. In-house investigations

The investigation to establish cause should not be conducted by people who are directly linked to the crash events in order to prevent bias or 'covering up' of deficiencies. The driver of the vehicle, for example, would not make a suitable investigator. Instead, someone who has a good grasp of the organisation's processes and policies should be involved to determine if these were followed or if they influenced the crash. The individual should have had training in crash investigation techniques and root cause analysis.

Assessing the causes behind your vehicle crash record and any apparent trends will make identifying and planning interventions more effective. In-house investigations also ensure that information stays in the organisation and interviews can be conducted discreetly and to suit the needs of individuals.

The insurance company may wish to conduct its own investigation. This decision will depend on your previous record with the insurer, the insurer's policy and the severity of the crash.

If the police are involved in investigating a crash, certain key guidelines should be followed:

- The policy should indicate who is responsible for liaising with the police and insurance investigations.
- All relevant records and files should be easily accessible for the investigation.
- An organisation should comply with all police and insurer information requests.
- The vehicle and load may be impounded for the duration of the investigation.

In the course of the organisation's investigation, the following roles could be consulted:

- Driver/ passengers involved
- Witnesses to the crash
- Vehicle technician who last inspected the vehicle
- Transport manager/ planner
- Supervisor of the passengers
- Emergency service personnel who attended the scene

In some instances, it may be suitable for the investigator to ask these individuals how they felt the crash occurred.

3.1.5. Interview techniques

An interviewer should be calm and ask unambiguous questions. This is not a blame-finding mission. All parties should be asked if there were clear warning signs or opportunities to avoid the crash. Throughout the investigation, all parties should be treated with suitable respect. In particular, it is important to consider the driver's own legal and human rights, as well as any additional processes involved as a result of union membership and organisation disciplinary processes.

Included in this toolkit are:

- A set of Crash Investigation Interview Questions to interview key people involved in the crash.

3.1.6. Vehicle checks

It is important to look at the vehicle and the operational practices that were in place at the time of the crash to assess whether these may have contributed to the crash. When investigating the vehicle, it is important to use all sources of information. Daily vehicle checks and servicing reports can provide information on a range of essential features such as tyres, lights, brakes, wheels and mirrors. It may also be worth considering in-vehicle diagnostics and telematics systems (if fitted) to gather a complete picture of the vehicle at the time of the crash.

3.1.7. Operational practices

The third important area is to understand the operational practices that may have contributed to the crash. Examples would include:

- Was the driver rushing under time pressure to meet an unreasonable deadline?
- Was suitable time allowed for maintenance and vehicle checking?
- Was the driver recently trained/ assessed for medical or training needs?
- Did the supervisor or manager brief the driver about the trip?

The analysis should focus on four areas:

- Procedures: Was there any deviation from procedures that might have led to the crash?
- Processes and practices: Which part of the overall work process led to the crash? Practices are things that are done but not documented.
- Decisions, behaviours and attitudes: What decisions, behaviours and attitudes might have contributed to the crash?
- Information and communication: What information was not available or ignored (from people or from other resources) that could have prevented the crash?

The outcomes of this investigation should be recorded.

3.2. Data analysis to establish trends and lessons learned

Analysis of data is important to help determine trends and issues and develop appropriate remedial actions to reduce future crashes. Road traffic crashes have many causes; what may appear to be bad luck can, on analysis, be seen as a chain of failures and errors that led to the road crash. This is known as the Domino effect.
These causes can be classified at 3 levels:

- Immediate cause: Factor(s) that obviously led to the problem (i.e., the iceberg that struck the Titanic)
- Underlying cause: These 'set the stage' for the problem to occur (i.e., the northerly route taken by the Titanic, close to an icepack, the speed of the ship, the inadequate look-out arrangements, etc.)
- Root causes: The causal factors that caused, or could cause, numerous issues to arise, not just the individual problem that occurred (in the case of the Titanic, there were multiple root causes, including insufficient lifeboats, flaws in the bulkhead design and an underestimation of the risks).

3.2.1. Root Cause Analysis

A root cause analysis allows an organisation to discover the underlying or systemic (rather than the generalised or immediate) causes of an incident. Correcting only an immediate cause may eliminate a symptom of a problem, but not the problem itself.

The importance of What, How and Why
Consider the following situation: A vehicle rolls over and ends up in a ditch. Two staff members are injured. A traditional investigation might conclude that the crash was the result of driver speeding. The driver might be issued a warning not to speed again and that is it.

An organisation conducting root cause analysis would learn that the speeding is a symptom of a larger problem. To determine if there are systemic reasons for crashes, the organisation should ask questions such as:

- Why was the driver speeding?
- Were there changes in conditions, processes, or the operating environment?
- What control mechanisms were in place to avoid the speeding?
- Why did these mechanisms not work?
- What tasks were underway?
- Has the organisation seen similar crashes or incidents in the past?
- What measures did the organisation take at that time?

It is important to consider all possible "what," "why," and "how" questions to discover the root causes of an incident. In this case, a root cause analysis may have revealed that the root cause of the speeding was a failure to have an effective time management program that would prevent late departures.

To prevent crashes from happening in the future, organisations need to put measures and controls in place at the underlying, root causes. Looking at the above example, if no measures are taken to improve time management, the driver will continue to work under stress and speeding will likely continue.

AN EXAMPLE - of the '5 Why' technique

The problem: A vehicle almost rolls over but the driver gains back control and nothing happens.

1st Why: The driver was speeding

2nd Why: The mission departed too late

3rd Why: Programme staff were not ready at the departure time

4th Why: Programme staff do not respect the agreed departure time

5th Why: The organisation does not correct mismanagement of time

In theory it takes five "whys" to get to the root causes, but in practice there will be cases where you may use more or fewer than five "whys". Keep in mind that also with this technique you can find multiple root causes.

Benefits of using the '5 Why method'

- Simplicity: Easy to use and requires no advanced mathematics or tools.
- Effectiveness: Helps to quickly separate symptoms from causes and identify the root causes.
- Comprehensiveness: Helps to determine relationships between various problem causes.
- Flexibility: Works well alone and when combined with other methods.
- Engaging: Fosters teamwork.
- Inexpensive: A guided, team-focused exercise with no additional costs.

Root Cause Analysis is not a blame game

Individual persons who are involved in a problem should not be regarded as a root cause. Even if a person made a mistake, a proper root cause analysis will invariably reveal problems with the training, coaching and monitoring of the person who made the mistake. The 'Just Culture' Framework (set out in table 2.1) outlines how to consider individual errors or behaviours. Being too quick to appoint blame is symptomatic of a 'scapegoat' culture that will inhibit the ability to find genuine root causes.

Table 2.1: 'Just culture' framework

Type of root cause:	Human Error	At-Risk Behaviour	Reckless Behaviour
Portrayed as:	Inadvertent action: Slip, lapse, mistake	A choice: Risk not recognized or believed justified	Conscious disregard of excessive risk/issues
How to manage?	Manage through changes in: - Processes - Procedures - Training - Design - Environment	Managed through: - Remove incentives for at-risk behaviours - Create incentives for safe behaviours - Increase situational awareness	Managed through: - Remedial action - Punitive action
What do you do as manager?	Console	Coach	Discipline / Sanction

Methods to identify causes of crashes

No crash happens for a single reason. There are often multiple gaps in an organisation's safety approach that lead to crashes or near-misses. Table 2.2 shows the various data analysis methods that you can use to identify the cause of a crash.

Table 2.2: Data analysis methods

Level of Cause	Investigation and analysis method

Immediate	- Crash / Incident Reports:
	  o At Scene Crash Report
	  o Driver Post Crash Form
	  o Manager Post Crash Form
	  o Police Reports
	- Technical investigation at the crash scene

Underlying	- Interviews with the staff members involved - Interviews with managers / supervisors to identify why the unsafe act or condition could happen - Observation of adherence to policies and procedures - Observation of technical state of vehicle - Data analysis from systems (such as vehicle tracking systems) - Assessment of the level of implementation of the Safe Systems Elements or Fleet Safety Management System
Root	- Analysis of job, personal or organisational factors that contributed to the crash (through observation and interviews) - Analysis of culture in the organisation (through observation and interviews)

3.2.2. Dealing with investigation findings and implementing remedial action

The importance of remedial action and learning lessons from crash analysis is critical to ensuring crashes do not reoccur. Once the root causes have been identified, the road safety manager (or team) needs to identify potential solutions.

Remedial actions may include, but are not limited to, the following:

- Management awareness of risks associated with road travel
- Safety culture programmes for management
- Implementation of staff road travel awareness training
- Staff empowerment to stop unsafe situations
- Hazard recognition training
- Driver advice and counselling
- Driver assessment and/ or training or retraining
- Disciplinary action
- Improved operating procedures
- Revised routing considerations/ improved journey planning
- Improved vehicle inspection and maintenance regimes
- Revised vehicle and/ or vehicle equipment specification

3.3. 'Near Miss' reporting

Organisations with a generative safety culture see near misses or near crashes as high-value and low-cost learning opportunities. As a result, they are making efforts to report, collect data, and investigate near misses and near crashes. Near-miss and near-crash investigations are considered to be an essential tool for effective risk management.

Why Focus on Near-Miss Events?
A near miss, by definition, means no crash occurred. So why report or focus on it? The reason is that even if a near-miss event did not cause injury or damage, it had the potential to do so. Near misses are only near misses due to a fortunate interruption in the chain of events that could have otherwise gone terribly wrong.

Some organisations have implemented 'Good Catch' programmes. Although Good Catch and Near Miss reporting serve the same purpose, which is to prevent future crashes or incidents from happening, they are not the same.

Spot the difference	
A Good Catch	**A Near Miss**
Proactive	Reactive
The results of vigilance and intentional action; mitigates or eliminates exposure to hazards.	The result of negligence, poor judgement, or chance, and exposes workers to hazards
"Through my engagement and proactive action, I recognised an unsafe condition, I acted upon it and prevented bad results from occurring."	"That was a close call. Something already happened that could have been very bad but it didn't happen and I am reporting it."

A Good Catch is when someone recognises an unsafe condition or poor-quality work, and proactively acts to prevent something bad from happening. This may involve pausing the work, correcting the unsafe situation or poor-quality work and coaching employees.

According to safety culture experts, the best indicator of an organisation's safety culture is the quality of the good catches submitted.

Included in this toolkit are:

- Best practices for establishing Good Catch or Near Miss Reporting
- Templates for reporting Good Catch or Near Miss incidents
- Toolbox Talks for explaining the importance of Near Miss reporting

3.4. Trend analysis

To effectively analyse if there are underlying similarities between multiple incidents, it is important that all crashes and near misses are recorded centrally within the organisation and checked regularly for emerging trends. One person should be tasked with overseeing the database for the organisation and offering the best assessment. Smaller chunks of the data (for example, by region or by load type) may not present the same overall picture.

When assessing the data, a number of potential similarities should be checked:

- Are there common crash types? (i.e., when reversing or with urban driving?)
- Are certain drivers or staff members overly represented in the statistics?
- Are there location hot spots or routes for crashes?
- Are there trends in terms of the time of day or night or light levels?
- Is the weather a factor in a large proportion of crashes?
- Are there similarities in specific programmes?
- Are there similarities in the age group or job role of drivers involved?

Careful record keeping, such as this, is indicative that the organisation has embraced a safety-led culture, and allows clear analysis and assessment of crash trends. For example, your analysis may demonstrate that a high number of crashes in the sector are linked to low-speed manoeuvres, such as turning and reversing in the compound. Taking all of the information gathered after each crash and aggregating it allows certain trends to be established:

- Do most drivers consistently drive well without any problems?
- Is one make of vehicle involved more often?

The answer to these questions may point to insufficient driver training or to a vehicle that is unsuitable for the role to which it is currently being applied. Alternatively, it might be an operational issue:

- Is it the layout of the compound that is causing these issues?
  Perhaps vehicle size has increased since the compound was set out, resulting in obstructions that were not originally envisaged?

Having identified the key issues, it is important to then develop some remedial options:

- Manoeuvring training for drivers?
- Re-adjustment of vehicle operations, either alternative vehicles or fitting of extra features to vehicles (such as mirrors/ sensors) to mitigate the problem?
- Could the compound be adjusted to ease the use of vehicles, such as being made one way?

This approach can be replicated in relation to crashes that occur due to a particular location, weather, vehicle defects and many other identified trends.

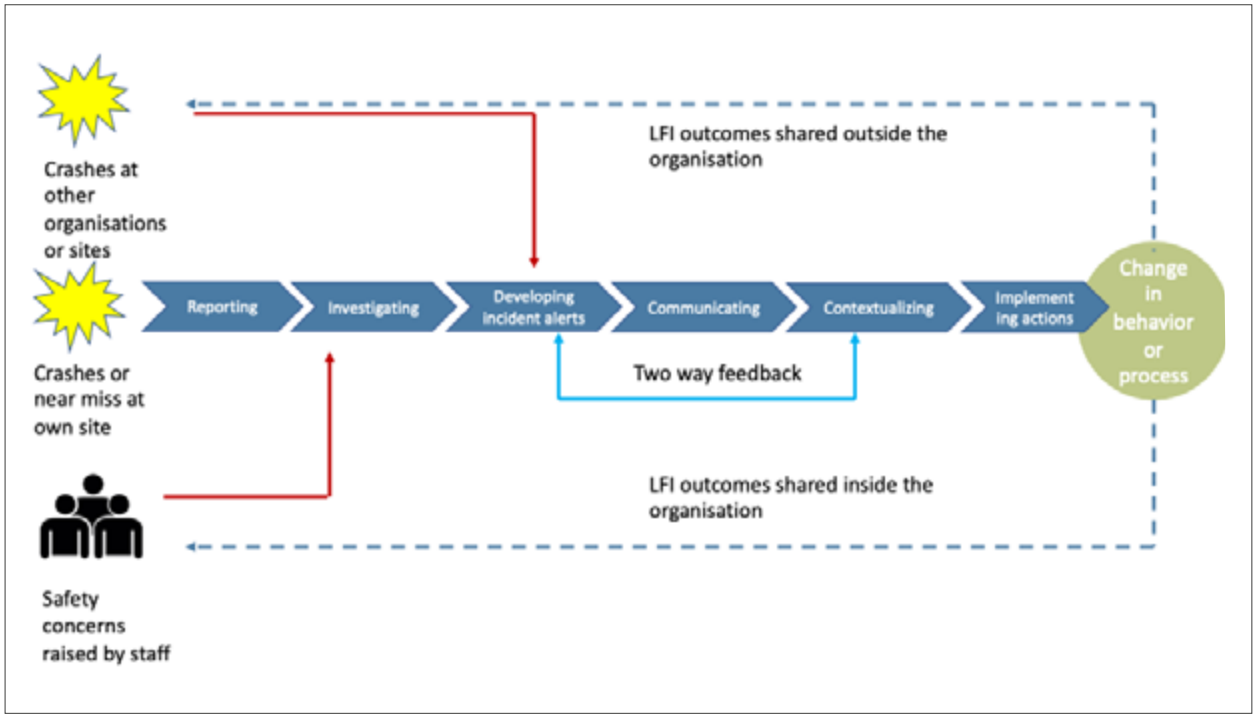
3.5. Learning from Crashes

The single most important reason to invest time, energy and resources in crash analysis is to learn and avoid more crashes in future. Learning from crashes is critical to road safety. Crashes are often repeat events or similar in nature to previous incidents. People then ask: "Why have we not learned from these past events, and why do people continue to make errors or ignore rules?"

Learning From Incidents [3] (or LFI) is one of many ways to manage safety in an organisation. LFI is a process through which employees and the organisation try to understand negative safety events to prevent similar future events. If all stages of LFI are properly implemented, the outcome should lead to changes in behaviour or to technical processes. The below graph shows the LFI process [4].

[3] | Text taken from https://www.hsmemagazine.com/article/learning-from-incidents (retrieved 20 September 2019

[4] | Energy Institute, Hearts and Minds Learning from Incidents, https://heartsandminds.energyinst.org'



The seven phases of the LFI process:

1. Reporting: Every crash or near miss must be reported. Reporting an incident raises awareness of potential problems that could lead to another, similar crash and provides a starting point for LFI. Reporting should be systematic and all events that could potentially jeopardize road safety should be recorded. The organisation should prioritise reporting over other competing goals.

2. Investigating: During an investigation, crashes are analysed to identify the causes of the crash. Ideally, immediate, underlying and root causes surface through the investigation process.

3. Developing incident alerts: The incident investigation provides a baseline for recommendations for inclusion in 'incident alerts', 'safety alerts', 'lessons learned', 'safety briefings' or 'incident communications' – information bulletins, reports or videos to communicate with staff. The incidents alerts are developed by the road safety team or by managers familiar with work processes and practices and should include data about the context in which the crash occurred and the causes that led to it. They should be clear and help people understand what to do to prevent similar crashes from happening.

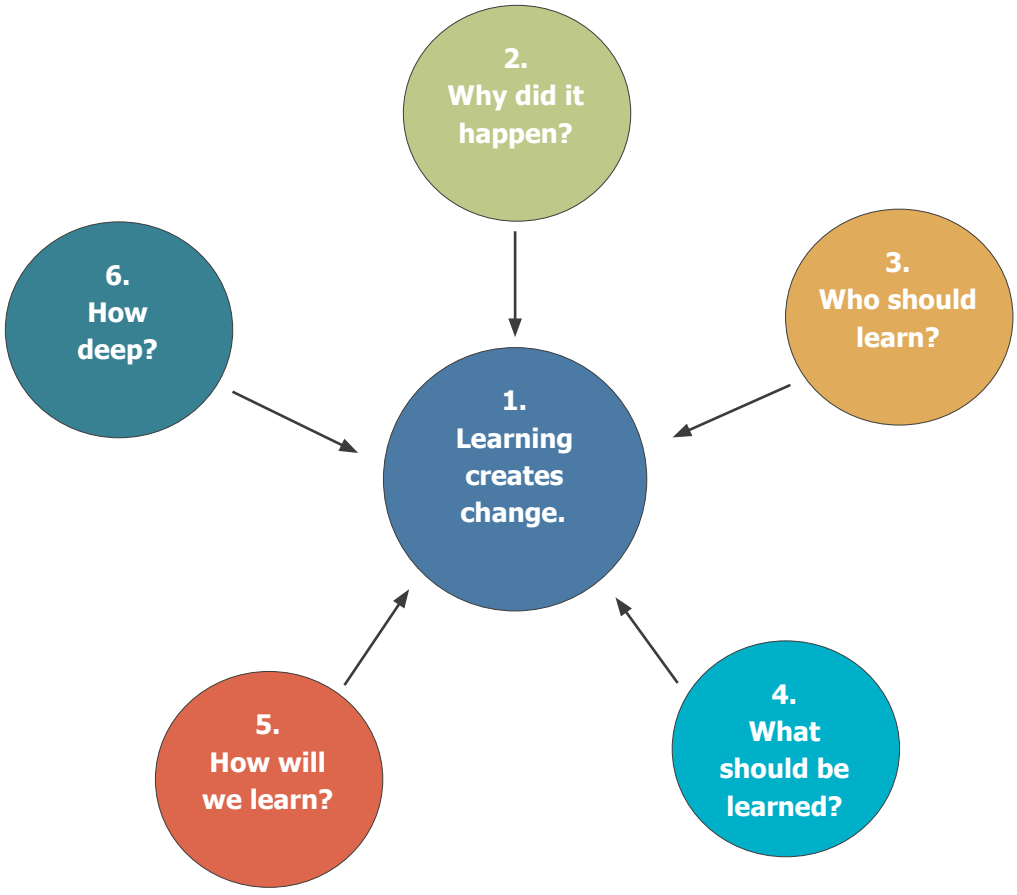
4. Communicating: Ideally, incident alerts should be communicated to everyone who might benefit from them. Sites should balance between all crash reports and targeting alerts to relevant groups of people. People with responsibility for developing incident alerts normally decide who should receive this information, though supervisors and line managers take responsibility for communicating incident information to their teams.

5. Reflecting: People need to be given the opportunity to reflect on the incident alerts, allowing them to think about the relevance of the crash to their own work. People must also be able to offer input and feedback for improving LFI, such as through identifying their own recommendations and actions for improving road safety. This allows people to be actively engaged rather than passive recipients of information.

6. Implementing action: During this phase, staff select which actions to implement into their work to enable avoidance of similar crashes. Implementing actions should be conducted once the previous phases are completed. Draw on the expertise of the workforce when implementing actions. LFI should result in a positive change in organisational process or behaviour, leading to an increase in road safety and a decrease in the chances of a similar incident happening. Without a change in organisational processes, practices or people's behaviour, learning cannot have taken place.

7. Change in behaviour or processes: Learning should result in a change in behaviour and/ or process. This can be as simple as updating a procedure, or as complicated as changing the culture of the organisation. Learning can only be said to have taken place if there is evidence of the change. The organisation should have in place a means of gathering this evidence. For example, in many organisations, recommendations from crash investigations are recorded in order to track when recommendations have been completed and to measure the effectiveness of the recommendations.

   Feedback loops: Learning should not be a one-way process; there should be an opportunity to provide feedback in order to improve the process and the information communicated. The first of these feedback loops is in the reflection phase. This phase should allow for opportunities for two-way feedback between the frontline (drivers, passengers) and those developing the incident alerts (road safety team). The second feedback loop is during or after the implementation actions phase, when improvements made should be reported back to the workforce. In this way staff can see the impact of their involvement in the LFI processes. The third feedback loop comes after the implementation actions phase and represents sharing the results of LFI internally in the organisation or externally with other organisations. This is the only way the whole industry can learn from road traffic crashes.



Learning from incidents principles [5].

Principle 1: Learning is demonstrated by a change in practice (how things are done).
The word 'learning' is used differently to mean different things. Some use learning to mean that an incident has been investigated, while for others it means that the outcome of the investigation has been communicated to the staff. However, we cannot say that learning has taken place, for an individual or an organisation, until we have evidence that things are being done differently.

Principle 2: For people to change their practice, they have to relate knowledge about a crash (or near miss) to their own work situation.
Complex incidents likely require opportunities for staff to reflect on how the incident relates to their own work. For each crash that we want to learn from, we need to ask:
Why did the crash happen?
Have similar crashes occurred before?
Did the investigation identify causes that were common in previous crashes?
Was the crash the result of a complex set of causes that people need to be aware of?

Principle 3: People learn by actively engaging with information.
Just because someone has received the information, does not mean they have learned. We should always consider who to actively engage at each stage of the crash lifecycle:
Who should be included in the investigation or analysis process?
Who should crash alerts be sent to? To everyone or specific teams?
Are opportunities for reflection provided?
Are processes in place that would allow people to give feedback and contribute their own expertise and ideas?

Principle 4: Some knowledge is written down, but a lot of knowledge exists only as practice or 'culture'.
Consider which type of knowledge you are trying to change:
- Procedures
- Work processes
- Decision making, attitudes and behaviours
- Information about crashes

Also consider how knowledge can be retained and how crash information can be stored so that they can be used to learn from other related crashes.

[5] | Energy Institute, Hearts and Minds Learning from Incidents, https://heartsandminds.energyinst.org'

Principle 5: Knowledge cannot be simply written down in a new procedure and may be best learned on the job.

Identify what the best way is to learn from a particular crash:
Are formal activities (safety meetings, training courses) or informal learning activities (learning by doing, informal discussions, etc.) more appropriate?
What informal learning activities can help improve learning from incidents?
How can relevant information from informal discussions be captured and fed into formal road safety activities?

Principle 6: Learning needs to be two-way.

The organisation informs the individual, and group knowledge is used to inform the organisation.
For each crash we want to learn from we should consider:
Was the crash caused by organisational issues (such as management issues, prioritisation of programme delivery over safety) rather than technical issues and human error?
Are you ready to change the organisational issues?
Do you provide opportunities for people to raise organisational issues without the fear of being blamed?
Is learning from crashes high on your priority list?

3.6. Selecting which recommendation to implement

Once you have analysed the root cause(s) of the crash, it is time to identify and implement recommendations or interventions. The aim of this step is to agree on the general interventions, not to design each intervention (which may require additional expertise). The safety team needs to agree upon selection criteria first, then brainstorm possible interventions, and finally use the criteria to select the priority interventions.

Possible intervention selection criteria include:

- Response to root cause(s): Above all, the intervention(s) selected must respond to the root cause(s) of the problem.
- Affordability: Do the necessary resources exist to follow through with this intervention and maintain it? Are there other ways to act on this intervention that might cost less? Can someone advocate for more resources to be allocated to this area?
- Feasibility: Are systems in place to support this intervention? Is it realistic and within the control of the organisation?
- Time available: How long will the intervention take to implement and demonstrate results? Do you have enough time? Are there constraints on the time frame?
- Appropriateness/acceptability: Will staff agree with and support the intervention? Did they suggest the intervention? Are they aware of what is being proposed?
- Benefit: Are the benefits of the intervention worth the resources necessary to implement it?