



The world authority
in powered access

GLOBAL MEWP SAFETY REPORT

Reported incident statistics
2016-2018

www.ipaf.org



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INTRODUCTION



Using MEWPs for temporary work at height is a proven safe method for a wide range of activities. IPAF and its members share data on incidents involving powered access with the goal of identifying areas of risk and common trends. The accident reporting project commenced in 2012 and the knowledge gained has been used to create safety awareness campaigns and inform all the work that IPAF does, including developing industry guidance and training.

IPAF's UK members have reported around 75% of the data in this safety report, however the project is expanding around the world, to increase our understanding of working practices and reduce incidents in every country. Reporting is not restricted to IPAF members, and any person or organisation can report an incident to a member of the IPAF staff or via the IPAF portal www.ipaf.org/accident

The IPAF Global MEWP Safety Report analyses incidents during operation in the workplace, maintenance and delivery of MEWPs. It identifies typical incidents, when and where they occurred. The data in this report is collated from incidents that occurred during 2016, 2017 and 2018.

“IPAF’s accident reporting project began in 2012 and the knowledge gained used to create safety awareness campaigns, improve industry guidance and develop training”

THE OBJECTIVE

The analysis of incidents reported to IPAF is undertaken to further improve and promote the safe use of powered access worldwide. All confidential information is removed from the data before it is reviewed by IPAF and shared with industry to improve regulations, technical guidance and training.

GLOBAL REPORTING

IPAF collates reports from around the world, from companies or individuals who share their experiences to allow others to work more safely. Incidents have been reported from members in 25 countries. The IPAF Global MEWP Safety Report analyses these incidents. It is expected that this will continue to expand and provide a wider overview of incidents in the access industry worldwide.

Working at height involves significant risk wherever in the world it takes place, though different work practices and accepted safety standards may result in higher rates of incidents in some territories than in others. The data can highlight these differences and recommend localised campaigns to target specific unsafe activities or behaviour.



WHAT IS REPORTED

All reported incidents involving MEWPs are collated by IPAF. This includes incidents that result in death, injury or a person requiring first aid. It also includes near-miss incidents that didn't result in injury, yet still represented a dangerous situation.



THE MACHINES

The report analyses incidents that occurred when using, delivering and maintaining Mobile Elevating Work Platforms (MEWPs).

In addition to this report, IPAF also collates incidents involving other machinery including Mast Climbing Work Platforms (MCWPs), passenger and goods hoists and telehandlers.



THE DATA SOURCES

Incidents have been reported from 25 countries, by the users and hirers of powered access equipment. Anyone involved in working at height can report an incident to the IPAF portal at www.ipaf.org/accident

The data presented is based on information collected in a number of different ways: directly reported via IPAF incident reporting portal www.ipaf.org/accident; information obtained by IPAF staff worldwide; data from regulatory/national bodies; and through information collated from press releases and news reports.



CONFIDENTIALITY OF DATA

The information provided to IPAF is confidential and private. Information that can identify a person or company involved in a reported incident cannot be accessed by anyone, including IPAF staff, and is removed prior to analysis.

IPAF is GDPR-compliant and has a privacy policy that can help you understand what information we collect, why we collect it, and how you can update, manage, export and delete your information. The IPAF privacy policy can be found at www.ipaf.org/en/privacy-policy



THE FINDINGS

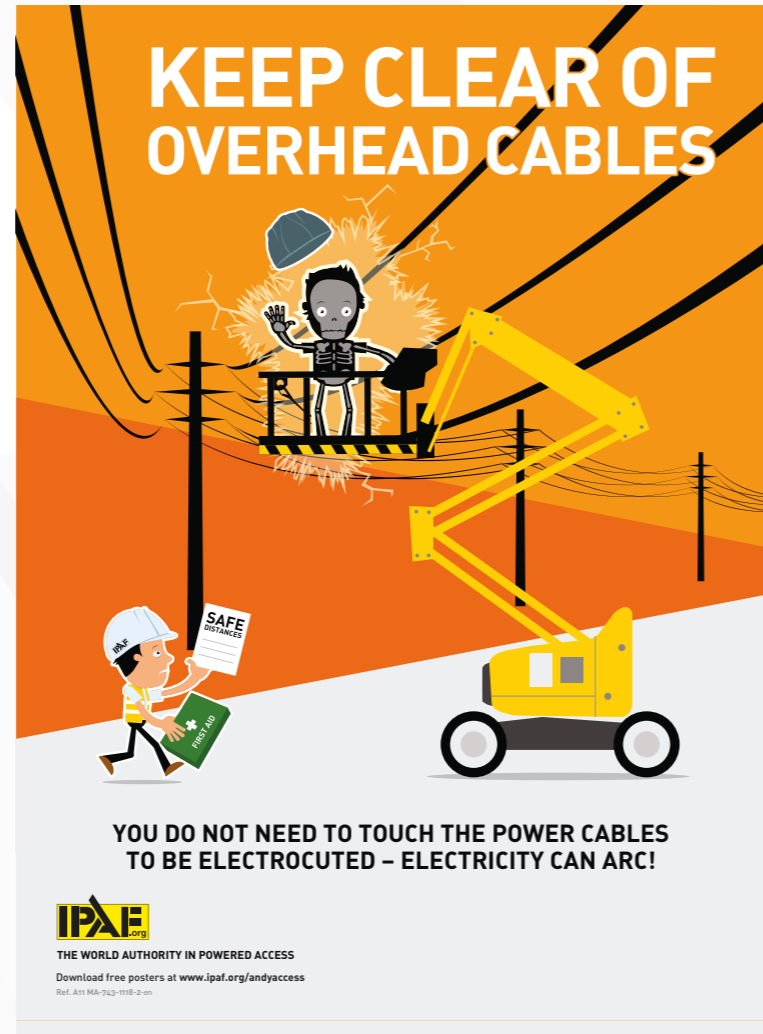
Falls from the platform, electrocution, entrapment and MEWP overturn are the four most common causes of fatality when using a MEWP.

A significant majority of the incidents resulting in fatalities that were reported to IPAF occurred in the US. A relatively high rate of reported incidents occur in public areas and on roads.

Forestry and construction are the industry sectors with the joint highest number of fatalities, though service/maintenance and electrical sectors also report a considerable number of fatalities.

Serious incidents resulting in death or lost-time injuries are more likely to occur when the MEWP is in the elevated position. The delivery of MEWPs, and maintenance of the machines, also result in high numbers of incidents.

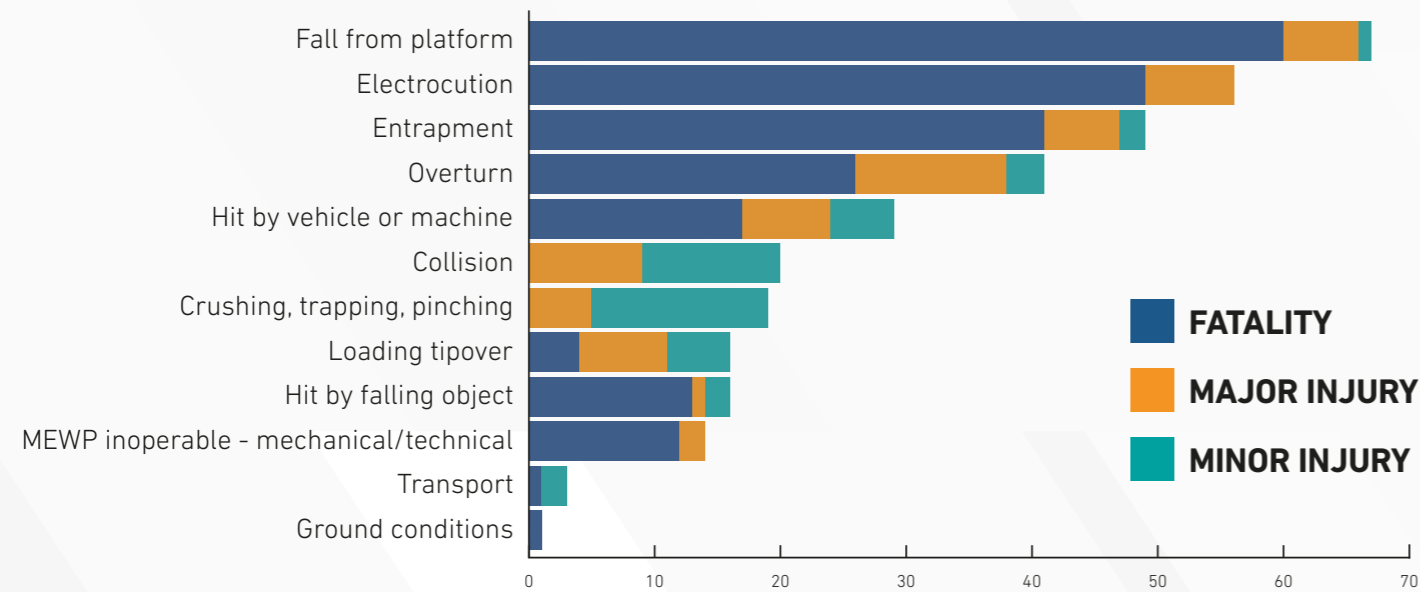
IPAF will publish a more detailed analysis in due course to all members who have fed into the accident reporting project, which will provide further information on incidents.



CATEGORY

LOST-TIME INCIDENTS BY CATEGORY 2016-2018

The chart on this page shows the top 12 lost-time incidents by category including all fatalities for the period 2016-2018. Lost-time incidents are incidents where one or more person was injured and as a result the person was unable to work for one or more days.



The IPAF Global MEWP Safety Report identifies the MEWP incidents that most frequently result in fatalities.

FALLS

Falls from height are the leading cause of fatal incidents when using powered access equipment. This highlights the need to follow a safe system of work when elevated, including remaining in the platform and also being attached with harness and lanyard in a boom-lift or vehicle-mounted MEWP.

Planning is key to the prevention of falls and includes the selection of a suitable MEWP for the task and adequate familiarisation. Refer to the IPAF Plan Ahead for Safety Campaign.

ELECTROCUTION

There are a significant number of electrocution fatalities from either live working on, or working at height near, high-voltage powerlines.

Planning is necessary to reduce the risk and work safely near powerlines.

The work plan should include identification of the power source, and arrange to isolate and de-energise powerlines before elevating. Refer to the IPAF Power Lines Guidance, observe the minimum safe working distance at all times, and where appropriate seek specialist advice.

ENTRAPMENT

MEWPs are often used in confined areas, or near overhead structures, where there is a heightened risk of trapping or crushing of the operator. The powered access industry has responded by improving awareness, providing guidance on how to reduce the risk, and the use of devices called secondary guarding.

In addition IPAF PAL+ advanced training is available for operators working in high-risk or challenging work environments.

Refer to the IPAF Avoiding Trapping/Crushing guidance. Secondary guarding devices can be used to reduce the risk of entrapment.

OVERTURN

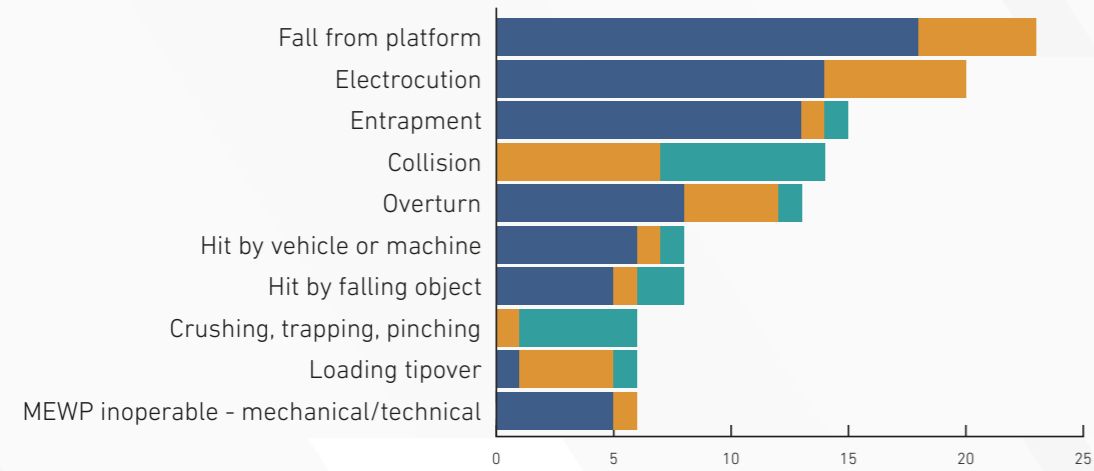
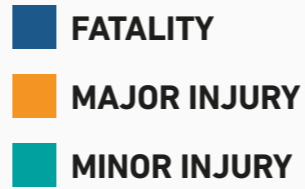
The overturn of an elevated MEWP will likely result in fatality for the platform occupants. It can occur due to excessive slope, inadequate ground conditions, incorrect deployment of stabilisers or outriggers, or extreme overloading.

Refer to IPAF's guidance on the assessment of ground conditions and use of spreader pads.

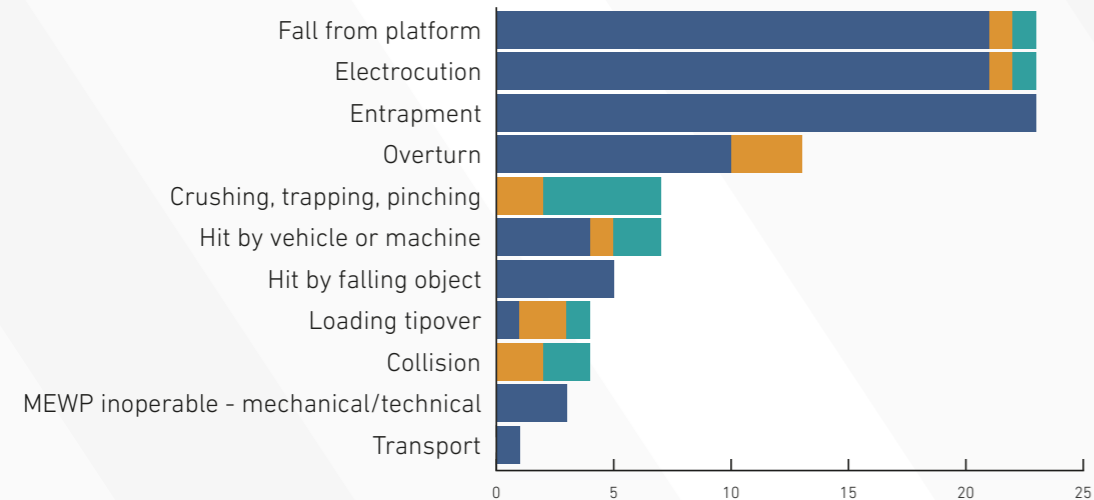
CATEGORY

TOTAL LOST-TIME INCIDENTS INCLUDING FATALITIES BY CATEGORY BY YEAR

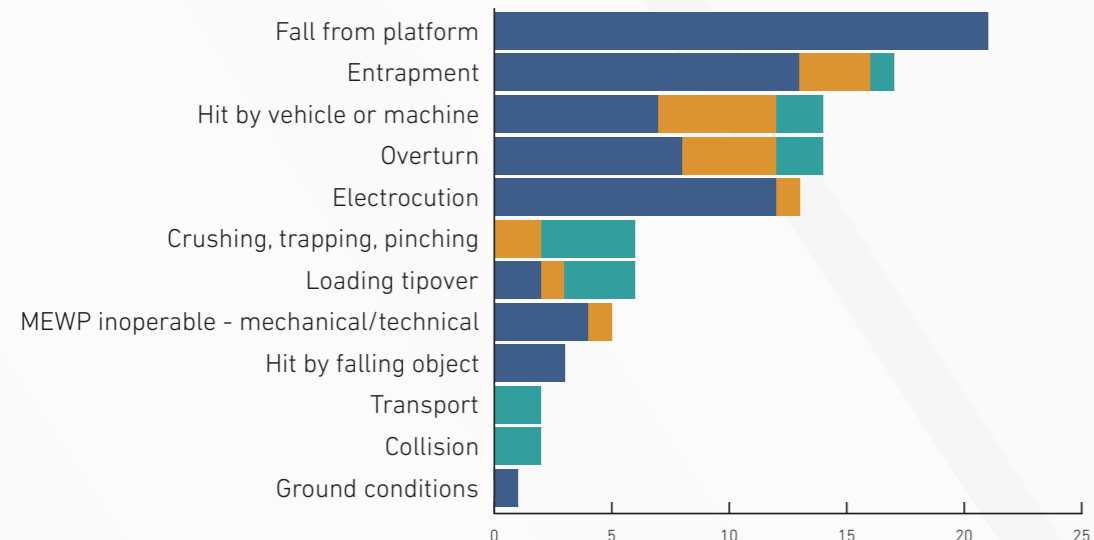
Fatal and lost-time incidents (One or more persons injured that caused the person(s) to not work for one or more days) by category, per year.



2016

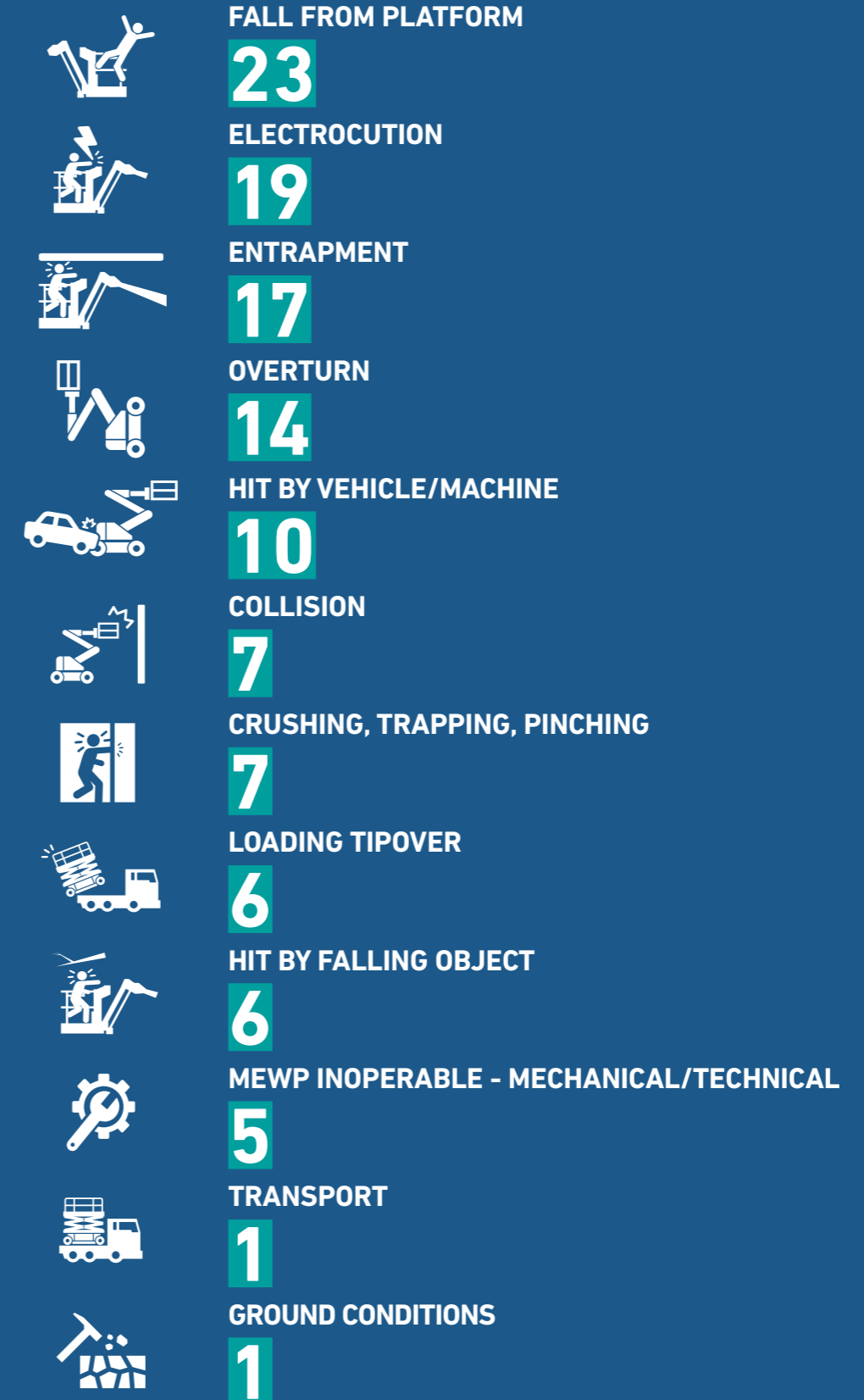


2017



2018

ANNUAL AVERAGE OF LOST-TIME INCIDENTS BY CATEGORY



INDUSTRY SECTOR REPORTED FATAL INCIDENTS

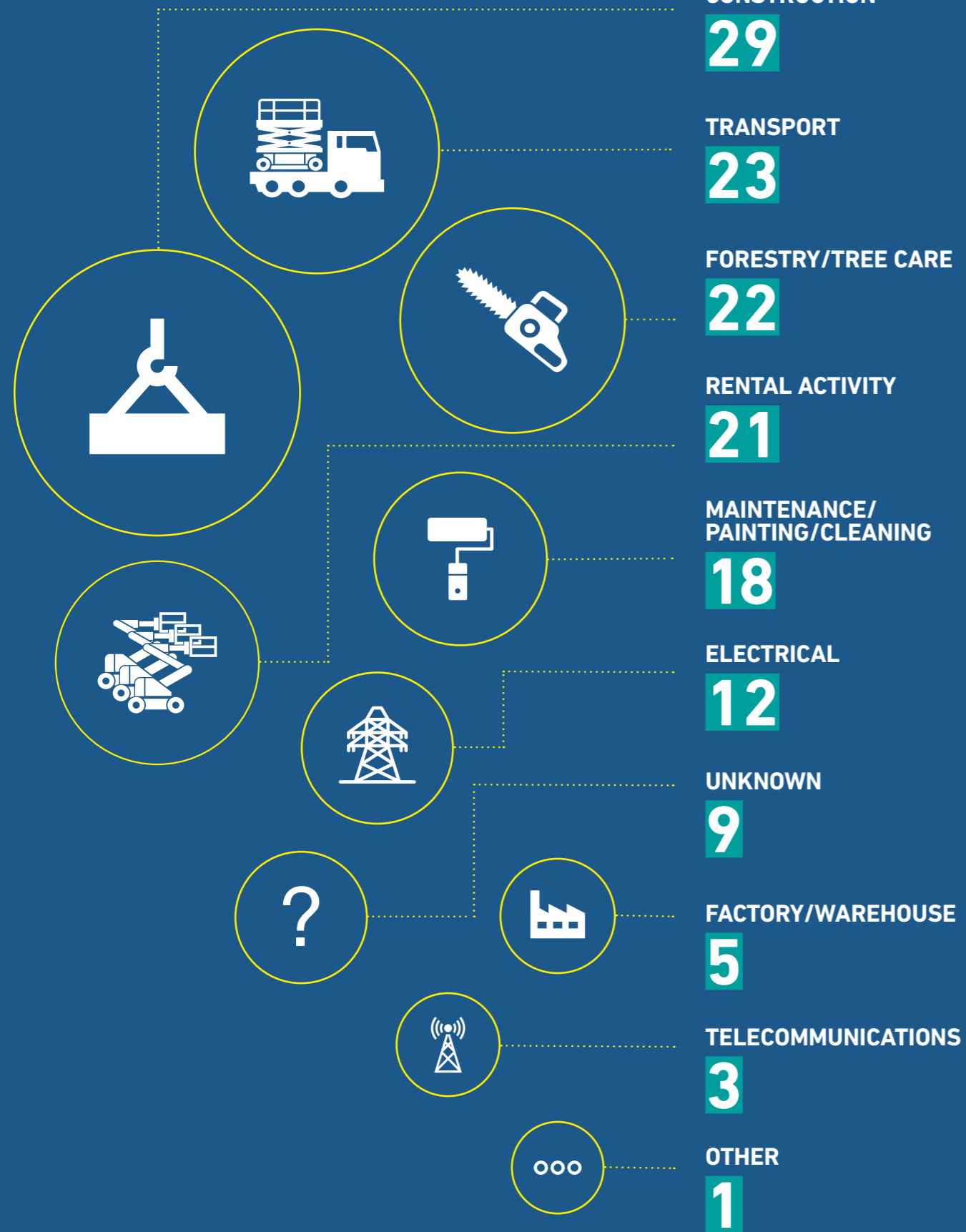


ANNUAL AVERAGE OF REPORTED FATAL INCIDENTS BY INDUSTRY



INDUSTRY SECTOR

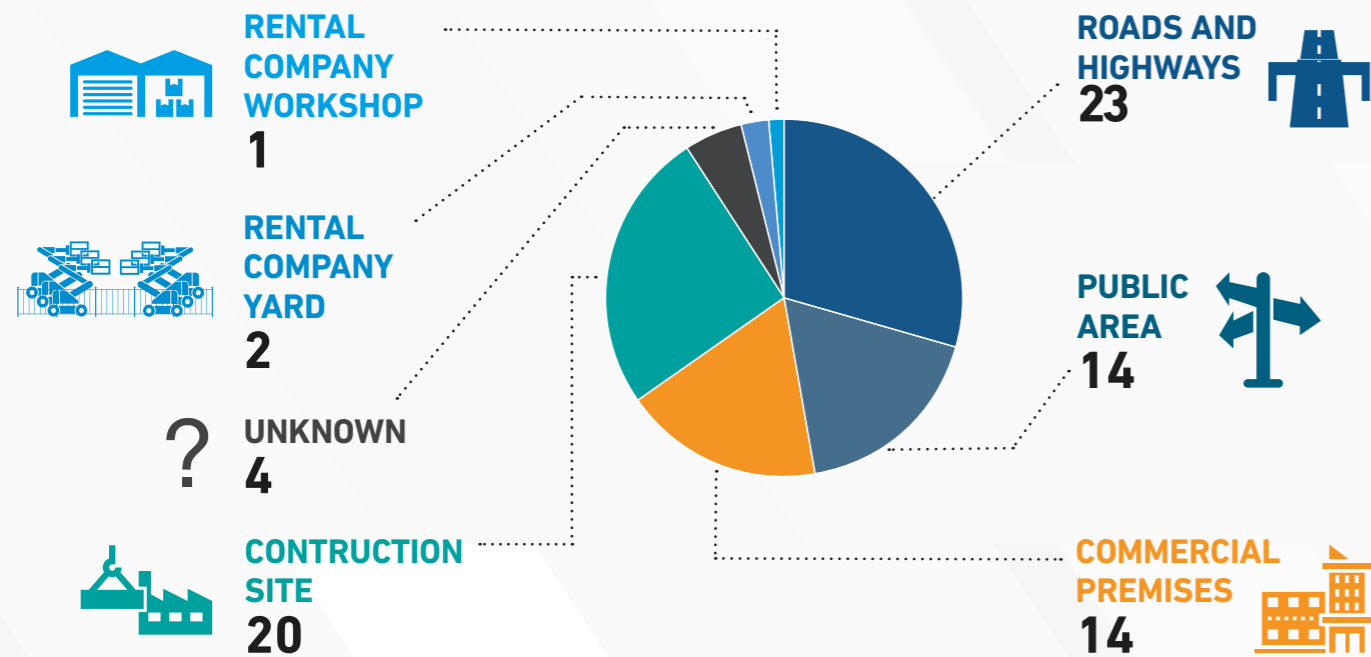
ANNUAL AVERAGE OF REPORTED FATAL AND LOST TIME INCIDENTS BY INDUSTRY



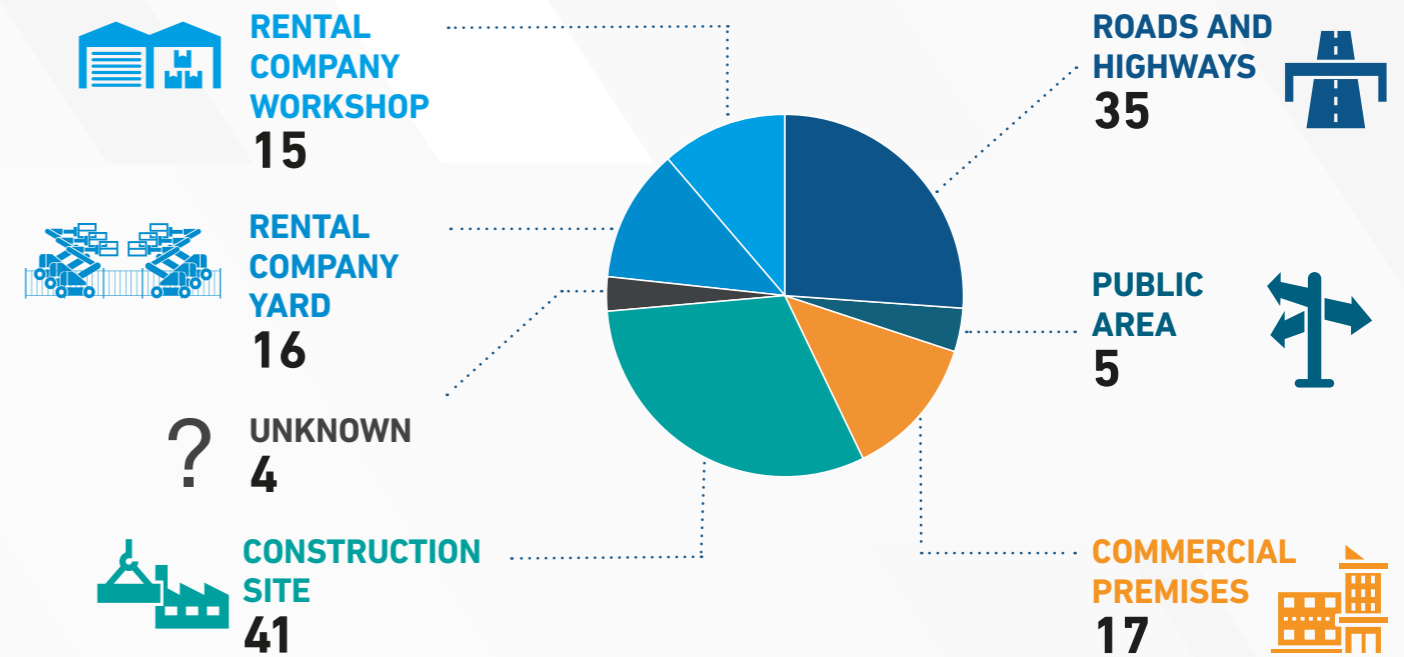
Note that owing to the fact that around 75% of the incidents in IPAF's accident reporting project are reported by members, industry sectors may be over or under-represented according to how active IPAF's global members are in each sector. Greater input from non-members and from organisations across all sectors will provide more detailed data and a greater understanding of the risks particular to each industry or sector.

LOCATION

AVERAGE NUMBER OF FATAL INCIDENTS BY LOCATION 2016-2018



AVERAGE NUMBER OF LOST TIME INCIDENTS INCLUDING FATALITIES BY LOCATION 2016-2018



MEWPs are used across a wide variety of applications and worksites. Each task must be properly planned and conducted safely. MEWPs are more commonly used on controlled sites such as construction projects or factories and warehouses than in public areas such as alongside roads. Our analysis finds it is proportionally more likely an incident involving a MEWP will occur in a public place than on a controlled work site.

Commercial premises include warehouses and factories. MEWPs are typically used for maintenance and service activities, or to conduct operations such as stock picking. Operator training is a key way to reduce incidents.

Recommendation: All operators are trained on the category of MEWP to be used and supervisors undertake management training to supervise working at height, for example the IPAF MEWP for Managers course.

Construction sites account for a significant number of fatal incidents. Using MEWPs in construction is now commonplace, from a small worksite with one MEWP to a large site with multiple machines in use at one time. The risk assessment needs to assess ground conditions and overhead obstructions. Supervisors need to know the risks and controls for working at height.

Recommendation: All operators should be trained to an appropriate level, and supervisors or managers

also trained, for instance using IPAF's MEWPs for Managers course. Managers and site foremen should use the free Andy Access site safety posters in daily briefings and in break or crew rooms, to remind all operators of common safety measures, and the new series of IPAF Toolbox Talks can also help managers give a daily or weekly safety briefing.

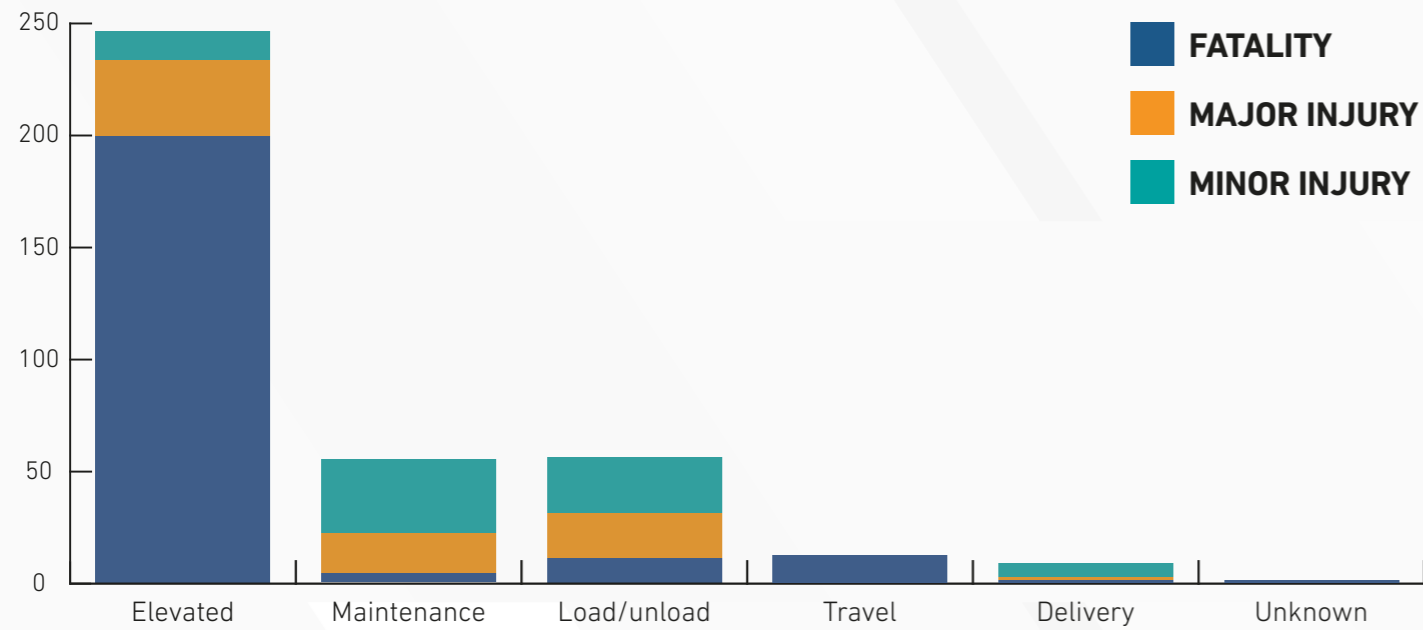
Working on or alongside roads means there is a risk of being hit by a truck, bus or other vehicle. It is inadequate and unsafe to assume that drivers of other vehicles will avoid a collision with the MEWP without proper segregation, protection and visual warnings.

Use traffic management and a pedestrian plan to prevent incidents. Refer to the IPAF Street Smart Safety Campaign.

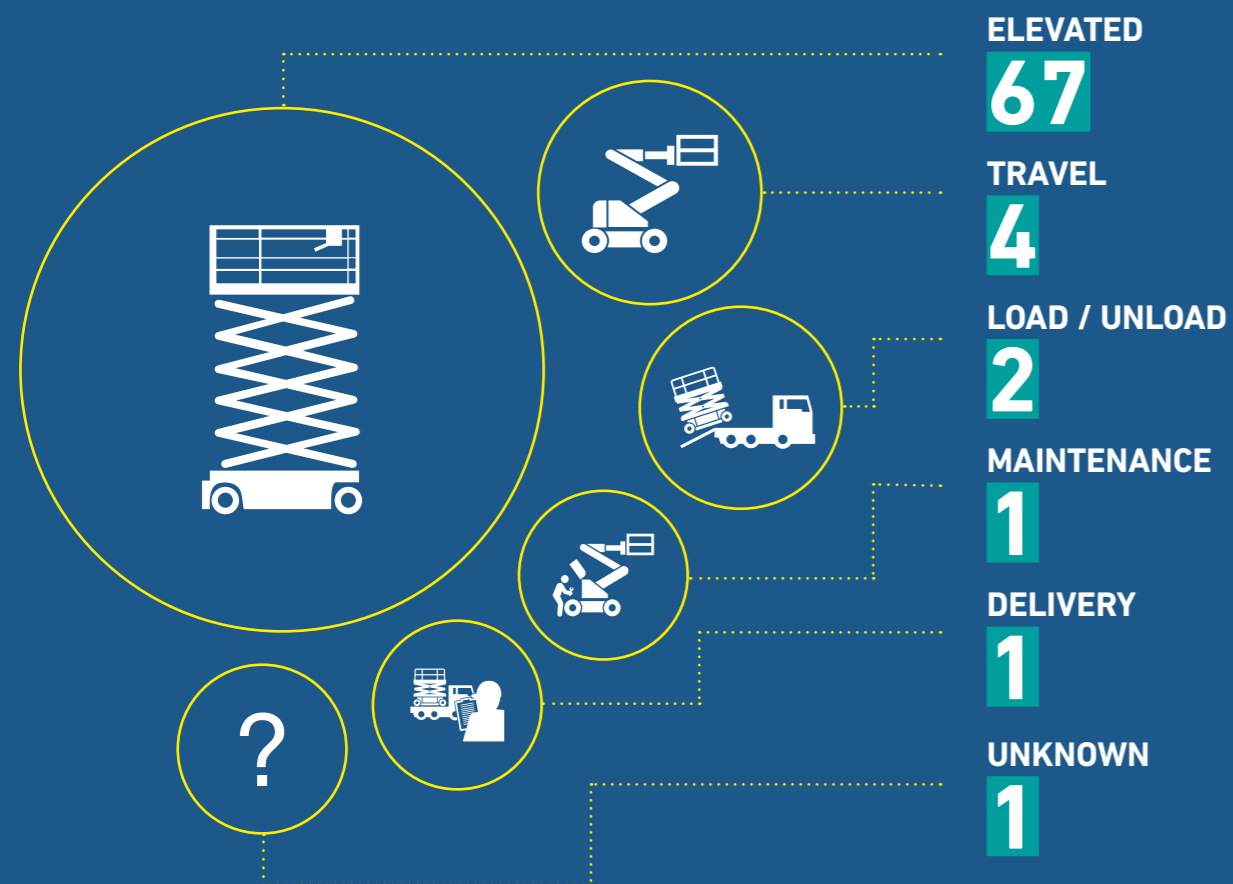
Working in public spaces and alongside roads poses heightened risk to the operator and others. Planning and risk assessment prior to commencing work is of vital importance.

ACTIVITY

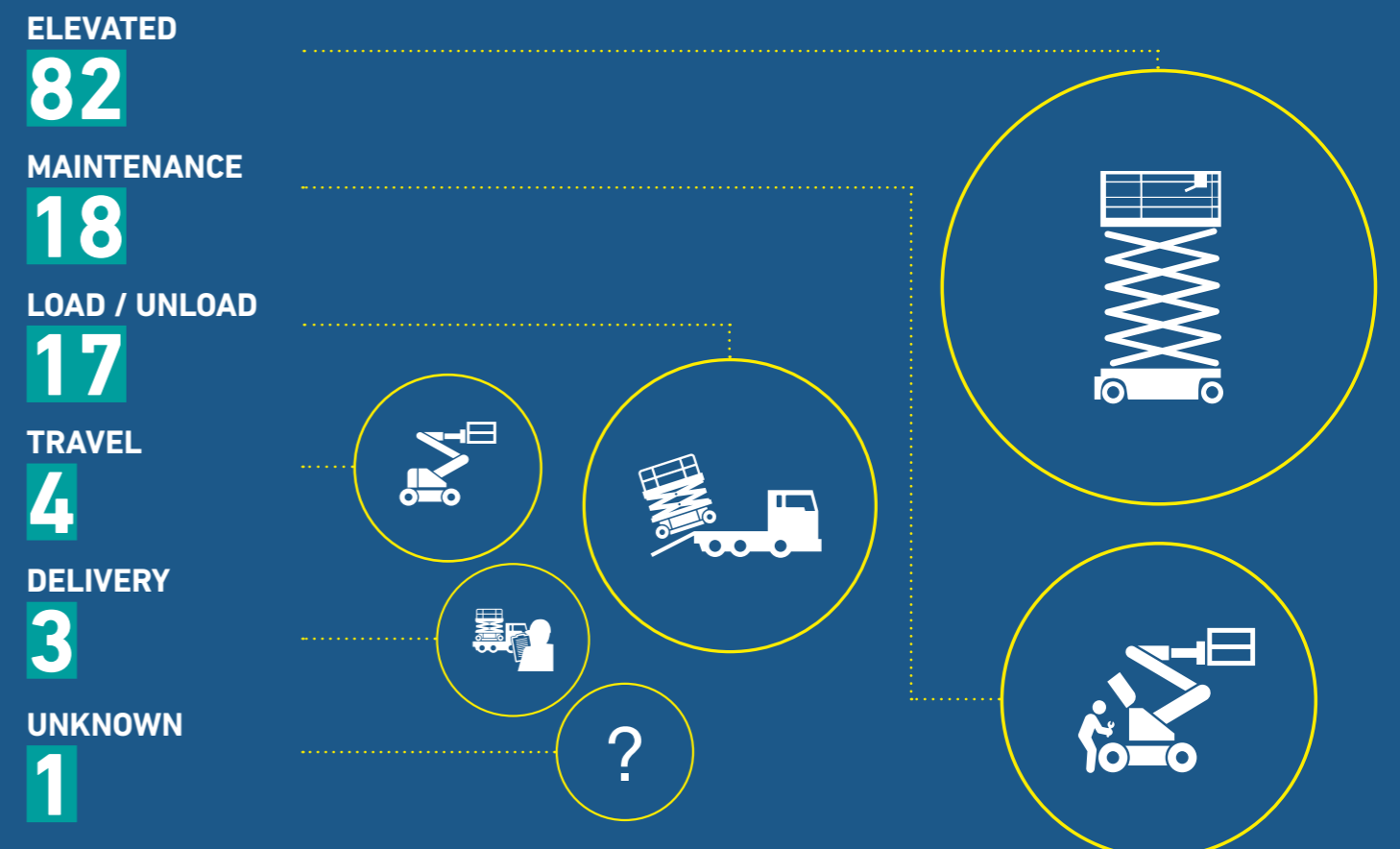
TOTAL LOST-TIME INCIDENTS INCLUDING FATALITIES BY ACTIVITY 2016-2018



ANNUAL AVERAGE OF FATAL INCIDENTS BY ACTIVITY



ANNUAL AVERAGE OF LOST TIME INCIDENTS BY ACTIVITY



HOW TO REPORT AN INCIDENT



All people including users and owners of MEWPs are encouraged to report incidents involving MEWPs, Mast-Climbing Work Platforms (MCWPs) and other types of lifting equipment. Reporting is available in multiple languages. **Go to www.ipaf.org/accident**



WHAT IS THE REPORTING PROCESS?

Sign in to the IPAF portal or report anonymously with one click. Using the drop-down screens and selectable icons provide as much information as possible about the incident.

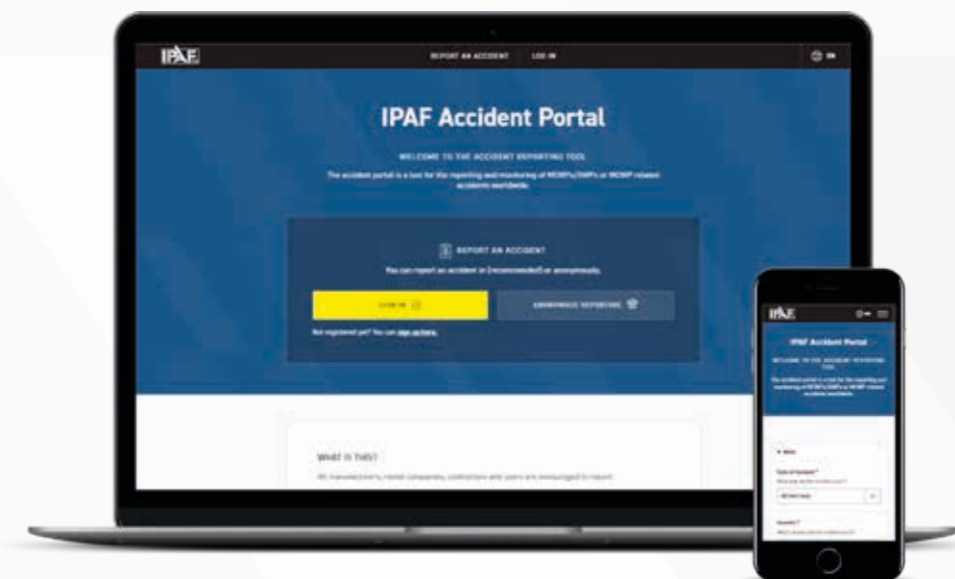
- **WHEN IT OCCURRED**
- **WHO WAS IN CHARGE AND WHO WAS AFFECTED**
- **WHAT WAS THE OUTCOME**
- **WHAT MEWP CATEGORY**
- **HOW WAS THE MACHINE BEING USED**
- **WHAT HAPPENED**



Specific details such as names, location, machine brand are not required to report an incident.

To ensure objectivity all identifying information is automatically redacted prior to analysis. The cause of the incident is not recorded, therefore it is not necessary to know the root cause or to identify the responsible persons. This project does not seek to apportion blame or responsibility.

The objective of this project is to identify areas of risk and common trends, then from the analysis to improve guidance, training and standards. When we focus on actual incidents we can focus on the real risks involved, and how best to prevent them. When IPAF CEO & MD Peter Douglas took up post, he used the ELEVATION 2019 event to reaffirm his commitment to the IPAF Reporting Project, which will see a major update to the IPAF Accident Portal during 2020, pictured below.



RECOMMENDATIONS

Falls from height are the most common cause of serious incidents when using a MEWP.

It is recommended that:

- When elevated personnel should always remain inside the platform with feet on the floor. Personnel should not climb or lean out over the guardrails.
- Personnel should only enter or exit the work platform at access positions at ground level or on the MEWP chassis, and not exit at height.

Further guidance is available in the IPAF document: Exiting the Platform at height (E2)

www.ipaf.org/en/resource-library/exiting-platform-height-e2

Falls from height can be avoided by planning the safe use of MEWPs. Refer to the IPAF Plan Ahead for Safety Campaign for guidance.

It is recommended that:

- Managers and supervisors should learn and understand the risks and best practice of using MEWPs. Specific training for managers is available, for instance IPAF's MEWPs for Managers.
- Managers should ensure that MEWP operators are suitably trained; that the correct machine is selected for the job; and all work at height is adequately supervised.



- When using boom-type MEWPs (1b and 3b) occupants must always wear a full body harness and connect the lanyard to the appropriate designated anchor point within the platform. The lanyard should be short enough for the wearer to be restrained within the platform. The lanyard may contain an energy-absorbing device.

Further guidance is available in the IPAF document: Fall Protection in MEWPs (H1)

www.ipaf.org/en/resource-library/fall-protection-mewps-h1

Remember: The platform guardrails are the primary fall protection in a MEWP.



The majority of reported incidents that resulted in death or lost-time injury occurred when the MEWP was in the elevated position.

The risk of injury is increased when operating a MEWP at height.

It is recommended that:

- To ensure MEWP operators are adequately trained for the task.
- Operators should be trained to use the specific category of MEWP.
- Operators should be familiarised on that MEWP.

Using MEWPs on or near roads and in public areas is high risk. It is essential that the MEWP and any personnel are positioned safely and not in the path of traffic. MEWPs must be safely loaded, secured and unloaded when transporting to and from the work site.

It is recommended to:

- Segregate the work activity to alleviate risk to the public or being struck by other vehicles.
- Ensure no part of the MEWP's structure extends or swings into the path of traffic.
- Use a traffic management plan to control vehicle and pedestrian movement around the MEWP.
- Cordon off the area beneath off beneath the MEWP to prevent any falling object striking anyone below.

All tasks require a safe-work plan, even tasks that are anticipated to be for a short duration.



Users of MEWPs are strongly recommended to report incidents. Facility managers and construction contractors responsible for planning and site management should ensure all incidents are reported.

Any report is confidential and all identifying information is removed before analysis. Help make working at height safer and go to www.ipaf.org/accident



The delivery and unloading of MEWPs results in significant number of Lost Time Incidents and damage to MEWPs.

It is recommended that:

- Users must plan for a delivery and take appropriate steps to allow it to be conducted in a safe manner.
- An appropriate supervisor is responsible for planning MEWP deliveries, collection and transportation.
- Operators and/or delivery drivers should be trained to load and unload MEWPs correctly.
- Clearly identified loading and delivery areas are provided at each worksite.



DEFINITIONS

A MEWP INCIDENT

An incident that occurred during the operation, movement, loading, transport or maintenance of a MEWP, which has resulted in harm to a person (operator, occupant, driver, technician or bystander) or damage to the MEWP or other object.

As well as fatal or non-fatal lost-time incidents, the following definitions may apply:

MAJOR INJURY

Injuries that prevent the a person working for more than seven days.

MINOR INJURY

Injuries that prevent the person working from one to seven days.

FIRST AID

A person suffered an injury but was able to continue work that same day. This may involve medical care, assessment or a visit to a hospital.

NEAR MISS

No injury or damage occurred, however there was significant risk.

INCIDENT CATEGORY

CRUSHING, TRAPPING, PINCHING

Fingers, hand, body crushed or pinched in machine or components.

Person(s) crushed between parts of the MEWP, for example between the wheel and extending structure, between the scissor arms, between the folding guardrails.

ELECTROCUTION

Person(s) electrocuted following contact with electrical current.

ENTRAPMENT

Person's upper body/head trapped or crushed between the work platform and an external structure, following movement of the MEWP (travel or elevation).

Person's head or body is caught between the machine and an external structure during operation:

This occurred during operation of the MEWP.

The person was in the platform.

FALL FROM WORK PLATFORM

Person(s) have fallen from the work platform.

Person(s) have fallen from another structure (roof, tree) when exiting the work platform.

Person(s) have been ejected from the work platform as a result of the MEWP movement.

This includes a catapult movement after the MEWP platform or extending structure became trapped or caught on an obstruction. This effect can also occur during travel of the MEWP.

FIRE/EXPLOSION

The MEWP or MCWP catches fire or materials or structures adjacent to the platform catch fire.

A battery or other explosive material in or adjacent to the MEWP has caused an explosion.

Electrical short and burnout.

HIT BY FALLING OBJECT

The MEWP has been struck by an external object for example a tree branch, sign or a part of the building under construction/destruction.

HIT BY VEHICLE OR MACHINE

The MEWP has been struck by another moving machine, for example a truck, car, train, gantry crane or forklift.

OBSERVATION OF UNSAFE SITUATION

Safety equipment including clothing, fall protection harness and lanyard, signs, machine guards and supports were not used or in place. For example "operator not wearing harness".

Manoeuvring the machine on inadequate ground.

Machine placed in an unsafe configuration or position. For example "boom overhanging walkway".

LOADING TIPOVER

The MEWP has fallen or tipped over during loading or unloading on to the transport vehicle. This includes when the MEWP has become partially dislodged from the truck bed, trailer or ramps.

The machine has rolled down the ramp or the winch has become disconnected.

MEWP INOPERABLE – MECHANICAL/TECHNICAL ISSUE

The MEWP is inoperable or cannot be used safely owing to mechanical breakdown or failure of technical/pre-use inspection.

OVERTURN

Loss of stability of the MEWP, so that the MEWP has overturned or partially overturned. A MEWP classed as partially overturned will be resting on an external structure or not have all the necessary ground points (wheels, stabilisers or outriggers) in contact with the ground.



ABOUT IPAF

The International Powered Access Federation (IPAF) promotes the safe and effective use of powered access equipment worldwide in the widest sense – through providing technical advice and information; through influencing and interpreting legislation and standards; and through its safety initiatives and training programmes.

IPAF is a not-for-profit organisation owned by its members, which include manufacturers, rental companies, distributors, contractors and users. IPAF has members in more than 70 countries, who represent the majority of the MEWP rental fleet and manufacturers worldwide.



REPORT AN INCIDENT AT:

www.ipaf.org/accident

IPAF SAFETY REPORT NEXT STEPS

Following the publication of this Global MEWP Safety Report, IPAF will offer more detailed analysis to members, in order for them to apply the knowledge gained through the ongoing global incident reporting project to their own business, to ensure safety protocols and best practice are up to standard and that the most common causes of accidents are addressed and prevented wherever possible. This detailed analysis will be available exclusively to members of IPAF, though IPAF will of course use the key understanding gained to inform all of the work we do to help keep the wider powered access industry as safe as it possibly can be.

BECOME AN IPAF MEMBER

By joining IPAF you are joining a global movement to ensure a safer powered access industry. Membership also brings a host of special services and benefits including access to the Safety Analysis for Members report.

For more information about becoming a member of IPAF visit www.ipaf.org/join

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IPAF's dedicated team of country and region representatives services the global membership



**The world authority
in powered access**

