



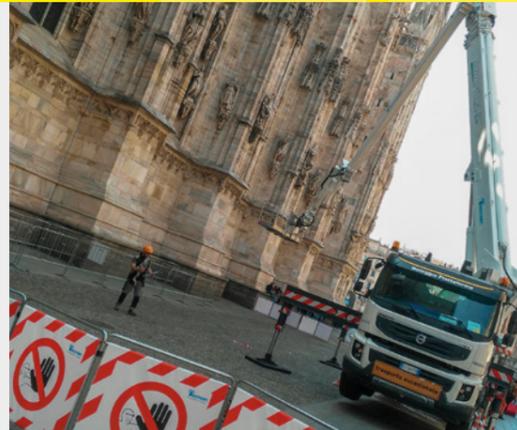
*Promoting the safe and effective
use of powered access worldwide*

IPAF GLOBAL SAFETY REPORT 2022

www.ipaf.org/accident



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Is complacency the biggest challenge to industry safety?

Looking back over the ten years since IPAF began gathering data on accidents, the main causes of serious injury and death when using powered access have been falls from the platform, electrocutions, and overturns. Reporting has improved since the early days, allowing for more detailed and sophisticated analysis of data. This should be recognised as a step in the right direction, but is there more we can do as an industry to drive down these all-too-common causes of injury and death?

In the decade since IPAF accident reporting began in 2012, we have logged incidents from more than 40 countries worldwide. The level of sophistication and detail in each of the 600-plus reports we are now gathering each year is such that we are able to deliver more detailed analysis than ever before.

This allows IPAF to tailor the work we do: For instance updating and modifying our training courses to address a specific concern; preparing targeted safety messages, such as the current Don't Fall For It! campaign aimed at reducing falls from the platform; or developing useful technical guidance, such as the Safe Use of MEWPs in Public Areas document released earlier this year.

Since we last published this report, IPAF has launched its ePAL app for operators and managers of powered access. As well as being a ground-breaking piece of technology bringing multiple benefits for users, the app offers quick and easy on-the-spot incident reporting. We hope this empowers operators to report all accidents, as well as minor and near-miss incidents, which often go under-reported.

The ePAL app is free to download for Apple or Android devices, and is available in all territories where IPAF delivers training – and many more besides. At the last count we had active users in 143 countries worldwide. How useful it would be if a significant number of these begin using the app to directly report incidents into the IPAF portal.

do, individually and collectively, to get to grips with the underlying causes and to really drive these numbers down?

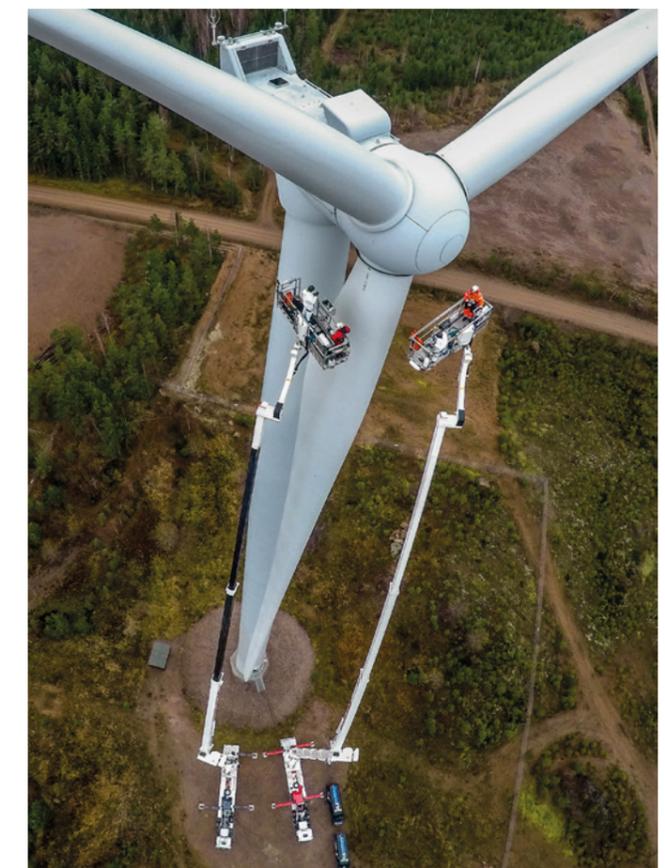
I hope that by studying this report – not just the annual or three-yearly trends, but the whole ten years of data – readers will gain a greater understanding of the challenges we still face.

IPAF is developing a customisable data dashboard that will be available to all those who are reporting into the portal. This will allow companies to benchmark their safety performance against their particular industry sector, or to look at trends by specific country, region or globally.

I would like to thank all those who have helped make this report possible: The IPAF International Safety Committee, our dedicated IPAF team, including our country and regional reps, and of course all those who are reporting into the IPAF portal on a regular basis.

We hope that you and your colleagues will continue to help IPAF to assist you in improving industry safety and reducing injuries and deaths. The best way to do this is to keep reporting incidents of all types, so that we can continue to maintain the most detailed database possible, into the next ten years and beyond.

Peter Douglas
CEO & Managing Director of IPAF



Foreword



A broader perspective on incident data

As IPAF has now been gathering powered access incident data for ten years, we have a set of statistics to review and can draw conclusions based on trends over a longer

period of time than ever before. As a result, in this edition of the IPAF Global Safety Report, we have been able to compare the figures over one, three and ten-year timeframes.

We know that much of the data gathered in the early years of reporting was skewed by the countries and specific sections of the powered access industry from which reporting was most prevalent, but the extended timespan nonetheless allows us to look at things with the broadest overview yet, and that has to be a good thing.

One thing the data shows is that – throughout the past ten years – the same three categories of accident are at the top of the list in terms of causes of serious injury and death: Falls from the platform; electrocutions; and stability/overturn of the machine.

While numbers going up can be a result of better reporting it is still a concern to note that the main causes of serious injury and death when using powered access machines haven't really changed in ten years.

Since this report was published last year, the IPAF accident reporting work group has been expanded to create IPAF's International Safety Committee (ISC). It was heartening that safety professionals from around the world stood up to be counted, from the UK, Mainland Europe, North America and Brazil to the Middle East, China and Australia, the first committee convened during 2021 had representation from all continents, united in a common purpose to challenge our industry to work more closely in pursuit of safety. It was an honour to be selected as the committee's first Chair.

As well as verifying and analysing accident data, the committee commits to periodically review IPAF safety and technical guidance to ensure it is up to date and reflects what the latest incident trends are telling us, beginning with the IPAF H1: Fall protection in MEWPs guidance.

All members of the ISC are giving up their time to help review the anonymised data being reported via the IPAF reporting portal and to identify trends, learning points and develop guidance which in time will support incident reduction. This IPAF Global Safety Report is never going to have all the answers that our industry requires, but it does clearly set out key areas of concern that should then allow industry stakeholders to review their own working practices to ensure they have adequate control measures in place.

Being able to do this over an expanded timeframe, from a broader range of geographic locations, enables us to better understand the challenges we face when seeking to drive down incidents, some of which lead to injury or loss of life. As we look back over the past ten years, we can see things are moving in the right direction in terms of reporting, with more reports in more countries than ever before being logged. We expect this trend to continue for a number of years before we reach the point where we can comfortably say that the majority of incidents are being collated. The main challenge as it now stands is to make genuine headway with our initiatives to reduce the most common types of accidents. IPAF's latest targeted safety campaign Don't Fall For It! aims to do exactly that; it is up to all of us to ensure that the impact of the campaign is felt around the world and right across our industry, to reduce in real terms the number of fatalities arising from this all-too-common type of incident.

Mark Keily
QHSE Director, Sunbelt Rentals and
Chair of IPAF's International Safety Committee

IPAF's database is more detailed and wide-ranging than in the early years, but we must acknowledge that the main causes of major injury and death have not changed in the ten years since we began gathering data.

While IPAF's database is more detailed and wide-ranging than in the early years, we must acknowledge that the main types of incident leading to major injury and death have not changed in the ten years since we began gathering data.

Andy Studdert, former IPAF President who also worked at a senior level in global aviation before joining our industry, made a very interesting point during this year's IPAF Summit in London. He referenced aviation's strong track record on safety, and praised the industry for its ability to work collectively to tackle the most pressing concerns, achieving measurable success before moving on to the next priority.

By comparison, do we as an industry sometimes focus too broadly? Do we sometimes try to spread our expertise and effort too thinly? The stubborn persistence of the most common causes of injury and death might in part be down to increased reporting over the past decade, but should we not still be asking what more can we

Executive summary

Steady improvement, but can we do more?

Incident reporting was up year on year, but the number of fatalities were down when comparing 2021 data to 2020's reports. This is an encouraging trend without doubt, but three accident categories have remained stubbornly consistent across the whole ten-year timespan of IPAF's accident reporting. This suggests that the industry is making incremental gains in terms of safety, and that better reporting is a key part of this. But could we do more to tackle the main causes of accidents and keep people safe, and if so how should the industry's safety focus be recalibrated?

In 2020, there were 603 reports from 28 countries. There were 628 people involved in these incidents, which resulted in 109 fatalities. This is a reduction in the number of fatalities from the previous year (2020), when there were 126.

The country that submitted the most reports in 2021 was the UK, accounting for 60.8% of the reports received. The US submitted 18.7% of the reports and the Republic of Korea entered 4.9%, which is a significant increase on previous years.

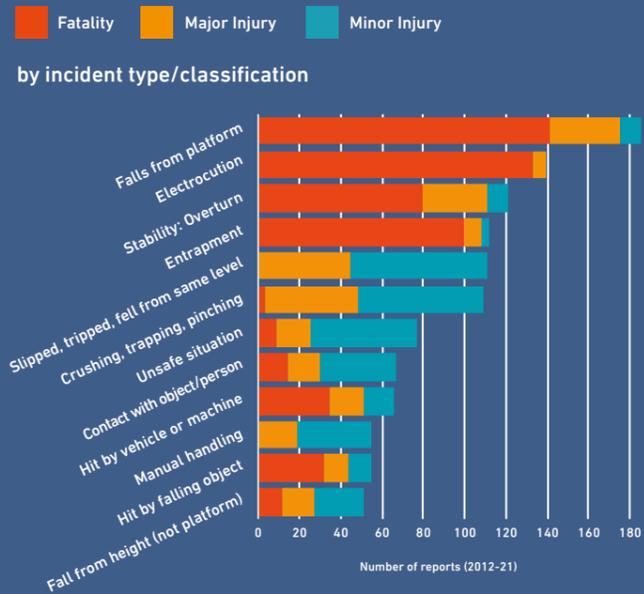
The sector from which most incidents were reported was the powered access rental industry with 43%, closely followed by construction with 29% of incidents. Facilities management accounted for just under a tenth of all reports (9.8%).

Reports by machine category show us that the mobile boom-type MEWP (3b) was the most common type of equipment involved in incidents, accounting for 29% of the reports. After that came mobile vertical-type (3a) machines at just under a quarter of reports (23.7%), closely followed by static boom-type (1b) MEWPs on 21.5%.

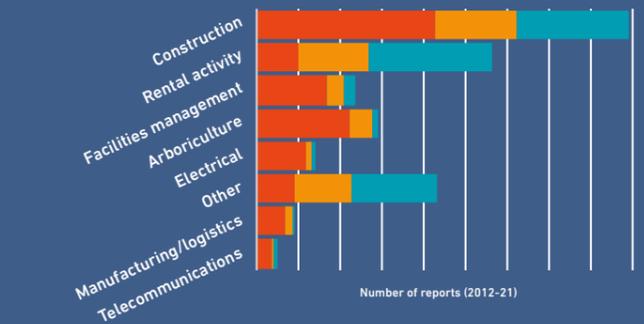
Looking at the three-year data shows 1,351 reports from 32 countries involving 1,438 people and resulting in 303 fatalities. Of these reports 60% came from the UK, 22.4% reports were received from the US, with the other countries reporting accounting for only single-digit percentages. In terms of end-use sectors, 38% of all reports were from construction, and 37% entailed "rental activity".

This year, IPAF is able to look back over a full ten-year's worth of data, as the federation began gathering incident reports in 2012. Data from 2012-2021 indicates 4,374 reports, including 4,462 lost-time incidents (LTIs) of which there were 585 fatalities. There have been 41 countries from which reports have been gathered across the whole ten-year period.

Lost-time incidents



by industry sector



by location



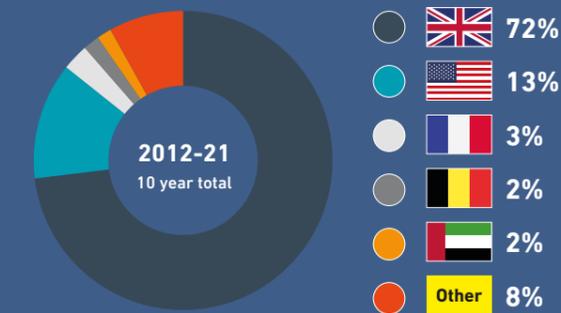
Reports by industry sector



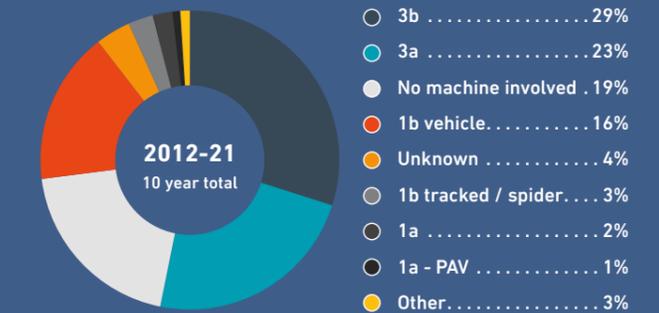
Top seven fatal incident trends



Reports by country



Reports by machine type



Analysis

In terms of incidents leading to one or more fatalities, it is clear looking back across the full ten years of available data that there have been three causes that have occupied the top three places in terms of being the most common type of incidents: Falls from the platform; electrocutions; and overturns. These are followed by entrapment; with MEWP inoperable mechanical/technical issues having recently risen to fifth place, possibly down to enhanced or more sophisticated reporting in recent years; with hit by vehicle or machine in sixth position. As in previous versions of this report, these most common types of fatal incident will be examined in closer detail across the following pages.

It is encouraging that more than 40 countries are now reporting to IPAF, but the data is skewed significantly by the fact that, in the early years at least, the majority of reports were gathered in the UK, particularly as the IPAF UK Country Council mandated incident reporting for all rental members from the outset. It is also worth bearing in mind the relative fleet size of MEWPs in each country, and number of hours worked at height using powered access. The US and China are among the two largest in terms of total fleet size, yet comparing the levels of reporting in each, it is clear that there must be many incidents going unreported in the latter. In the most recent year of reporting, IPAF has seen a significant uptick in levels of reporting from the Republic of Korea, which has a MEWP fleet similar in size to that of the UK. When looking at the past year's data alone, Korea accounts for a significant share of the reports; over the ten years as a whole – as you would expect – the "real" number of incidents has been under-reported, while the UK proportion is

skewed. Historically, the UK has been proactive in reporting, while in other countries the reporting and collating of data is still in the embryonic stage. IPAF continues to work to increase reporting from all countries, sectors and users of powered access, and hopes the introduction of the ePAL app for mobile devices, upcoming dashboards for reporting companies, and new country dashboards can help drive change and give IPAF's respective country and regional councils additional insight to encourage – and perhaps one day mandate – their members to report.

A high proportion of incidents have occurred while equipment has been in the elevated position, but is important to also recognise the significant number of incidents, including some fatalities, that have occurred while loading/unloading and during maintenance of equipment – hence the enhanced focus in this year's report on "rental activities" (see p20-21 for more details). There are also interesting comparisons to be drawn between machines travelling in the elevated and lowered positions, which this year we have looked at in specific detail in the expanded falls from the platform analysis (see p6-9).

When we look at occupation of those involved in incidents, in the majority of cases it's the employees of rental businesses that are reporting these incidents – not the end user. IPAF recognises this with the new focus on rental activity in this report, and is also working with contractors and other industry bodies to encourage engagement with incident reporting through both the ePAL app and online via the portal www.ipafaccidentreporting.org



Is this type of incident our industry's blind spot?

Defined by a person or people that have fallen from the platform, or have fallen from another structure having exited the platform or have been ejected from the platform as a result of MEWP movement. This includes the "catapult effect" following the MEWP being driven over rough ground, becoming snagged on another structure or struck by a vehicle or machine.

Over the past 10 years, this type of incident resulted in 239 reports, from 20 countries, involving 141 fatalities. The countries with the most reports are the United States, the United Kingdom, Republic of Korea and Germany. The industry sectors in which the most falls from the platform have been reported are construction, arboriculture, rental activity and facilities management.

Looking at the types of machines that were involved in falls from the platform, static boom (1b) type machines are most commonly involved (30.8% of incidents), closely followed by mobile vertical (3a) types (28.8%) and then mobile booms (3b) at 22.8%.

When we look at the type of outcome involving falls from the platform, we can see there were 130 fatalities, 42 major injuries, and 11 minor injuries. Even allowing for the possibility that an incident resulting in a minor injury is more likely to go unreported, it is clear there is a high probability that anyone involved in a fall from a MEWP platform will be killed or seriously injured. Over the whole 10-year period of data this works out at approximately 18 falls from the platform annually.

Most fatal incidents of this kind are occurring in construction or in arboriculture, followed by facilities management, manufacturing and logistics. While the greatest raw number of accidents of this type occur on construction sites, given the far greater number of hours worked using MEWPs of all types in construction, this may obscure the fact that, proportionally, risk is greater in arboriculture or facilities management.

Rental activity (delivery, collection, loading and unloading machines, manoeuvres in depots, cleaning and maintenance of machines) has also led to fatal incidents involving falls from the platform (see p20-21).

The majority of falls from the platform happen while the machine is in the elevated position. But we can also see they occur while travelling in both the elevated and lowered positions, many of which are likely to be ejections from the platform, owing to the catapult effect.

Analysis

During 2021 there were 29 reports of falls from the platform from seven countries. There were 29 people involved in these incidents and 20 people lost their lives. Most incidents occurred in the construction industry, accounting for 35.5% of all fatalities; facilities management had 16.1% and arboriculture had 9.7% of fatalities.

The Republic of Korea submitted the most reports, in total accounting for 48.4% of all reports; an encouraging uptick in reporting from a country where previously there has been minimal reporting. The US accounted

for 25.8% of reports, followed by Germany with 9.7% of all reports.

The most common type of equipment involved in falls from the platform over the past year were static booms (1b) at 59%. This type of equipment can sometimes be more complex than other types of MEWPs, in particular setup and positioning is critical to their safe operation.

All operators and supervisors should be properly trained and familiarised on the equipment being used. Manufacturer's instructions should always be followed when stabilisation systems are used.

Additionally, operators, managers and supervisors should pay close attention to ground conditions and monitor the condition of the ground while the MEWP is in operation.

The three-year data shows 78 reports from 12 countries involving 91 people, this resulted in 54 fatalities. Over the 10 years there were 130 reported fatalities, but accuracy and reach of reporting has improved significantly over time and so that is the most likely statistical explanation for why the average number of deaths resulting from falls from the platform may seem to have increased.

In terms of the past three years, just under half of all falls from the platform (48%) were reported from the US, 16.5% were from the Republic of Korea, followed by France and Germany on 7.7% and the UK and Netherlands on 5.5%.

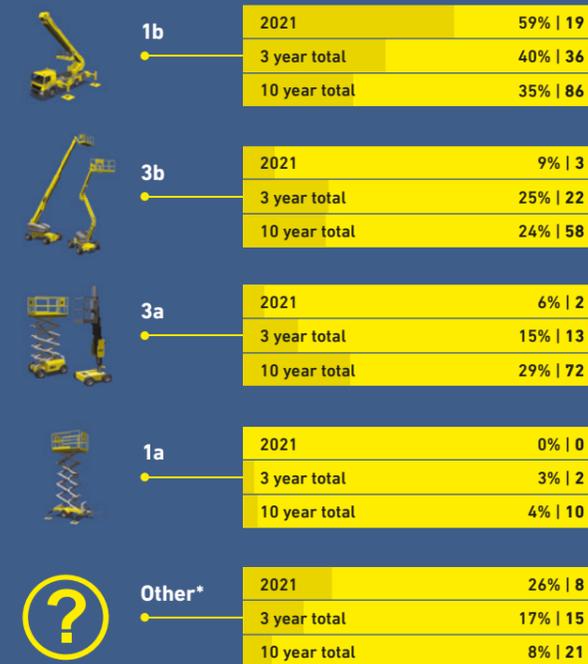
Over the past three years, 44% of all falls from the platform were in the construction industry, with arboriculture and "other" amounting to just over 20% and facilities management at 15%.

Across the latest three years of data, most people fell from a 1b type vehicle, often a truck or van-mounted machine. Around

25% of people fell from a mobile boom (3b) and 15% fell from a scissor or mobile vertical type machine (3a type equipment).

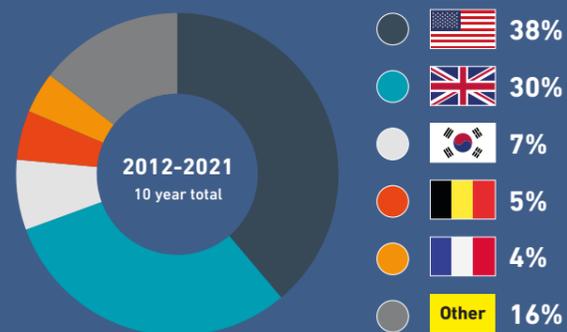
A number of incidents involving mast-climbing work platforms (MCWPs) and construction hoists are now being reported via the IPAF portal, which is to be acknowledged as a positive development of the ongoing drive for better reporting. If we combine roads and highways, commercial premises and public areas, these together surpass construction sites. Equally, we can see also that a significant number of fatal, major and minor incidents also occur in rental yards and workshops.

People involved by machine category



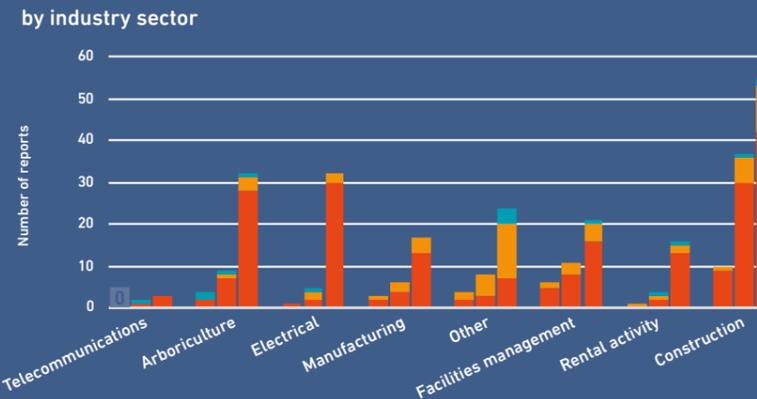
* 2021 – transport platform, 2a, goods hoist, unknown
3-year total – transport platform, 2a, mast climbing work platform, unknown, goods hoist
10-year total – no machine involved, mast climbing work platform, transport platform, unknown, 2a, goods hoist

Reports by country

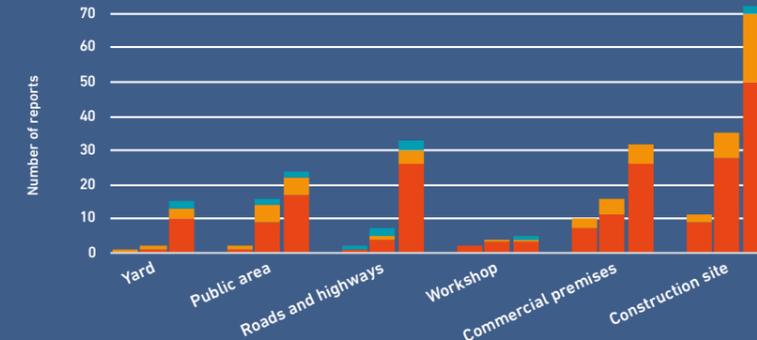


Lost-time incidents

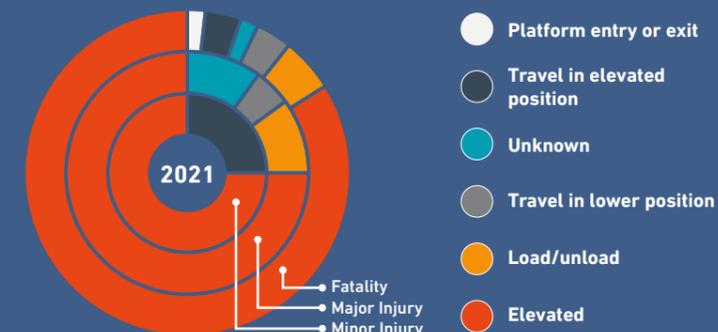
Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total



by location



by machine configuration



People involved by industry sector



Why do people fall from MEWPs?

The industry is still seeing people fall from the platform and, as so often with this type of incident, people are being seriously injured or killed. IPAF recommends that in a boom-type platform occupants must wear a full body harness with a short adjustable lanyard, except in exceptional circumstances where a risk assessment deems it unnecessary or could increase risk, such as working over water. There is also the risk of the catapult effect where an occupant is thrown from a boom platform, even when not in the elevated position. Yet we are still seeing fatal falls from height – as an industry, we have to ask why?

Measures we know prevent falls from the platform – thorough site risk assessment, correct machine selection, wearing of personal fall protection equipment (PFPE) in boom-type platforms, not exiting or unclipping from the anchorage point in the platform at height – are widely adopted in industry-wide safe practice guidance. So why then do injuries and deaths keep occurring?

Analysis

Analysing the data over the whole ten-year period since reporting began allows us to consider possible causation of this type of incident, which differ depending on the category of equipment being used:

1b type – trailer/truck/van and truck-mounted

- A heavy bias towards operators not wearing PFPE, against guidance which recommends the wearing of PFPE when using these types of MEWPs.
- On many occasions, if the operator and occupants had worn correct PFPE and connected their lanyard, we believe they could have prevented the initial fall or survived being ejected from the MEWP under the catapult effect having been struck by another vehicle or object.
- We have seen an increase in technical failures of boom superstructures leading to falls from the platform. Ensuring the MEWP undergoes the necessary periodic examinations, inspections maintenance as well as pre-use and OEM guidance practice should minimise this risk.
- We also had reports of violations and behavioural issues, including climbing on guardrails, leaning out of the platform, exiting or entering at height.

1a static vertical/3a mobile vertical:

- Over-reaching has not only been identified as the largest probable causation in this category, but it is also something that can easily be avoided.
- Good planning and suitable MEWP selection and training reduce risk substantially. The correct MEWP for the job should be specified, the work zone cleared so that the MEWP can be set up as planned and the operator can safely manoeuvre into position to allow safe access to the place of work.
- Operators and occupants can vastly reduce their risk from falling out of these types of MEWPs. However, it is essential MEWPs are correctly selected during the site assessment, ensuring the platform



DON'T FALL FOR IT!

If it doesn't look right on site – call it out. In this scenario there are several mistakes that increase the risk of a fall from height.

Platform gate open at height – the platform entry is part of a MEWP's primary fall-protection and should be closed when the MEWP is in use or elevated. ①

Missing PPE on workers at height (no hard hat) – where risk assessment shows overhead/fall hazards exist, PPE should be worn. Hard hats are part of standard PPE. ②

Leaning out of platform – if the MEWP is selected and positioned correctly, it should not be necessary for occupants to over-reach or climb on guard rails. ③

Lack of edge protection on scaffold tower – edge protection on towers or structures are similar to primary guarding on MEWPs. This tower is not built correctly. ④

The ladder is incorrect – in this scenario the ladder is too short; its angle is too steep and it is not properly secured. This amounts to incorrect equipment selection. ⑤

No edge protection on the intermediate floor – as with MEWPs and scaffold towers, structures under construction should have measures in place to prevent falls. ⑥

Poor set-up position – it is critical to ensure MEWPs are positioned so that occupants can reach the intended work area to ensure over-reaching is not necessary. ⑦

can reach the intended work area without the need to over-reach. Use the slide out decks if available and position the machine correctly. If it's not right stop.

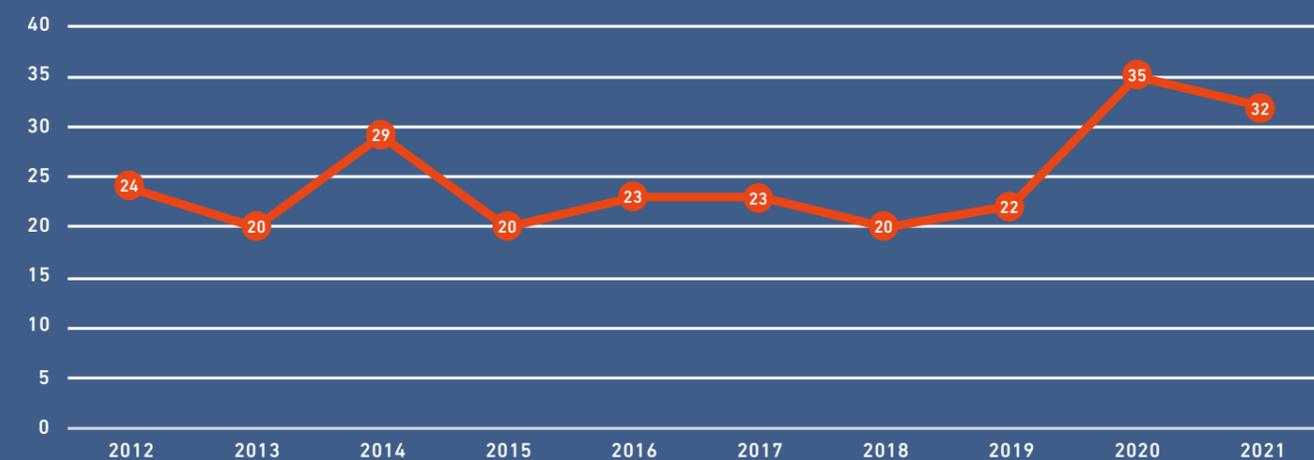
- Technical failure – Carrying out a thorough pre-use check is essential and can prevent incidents happening by identifying faults and damage prior to use. Ensuring periodic thorough examinations/inspections are carried out in line with the relevant local regulations.
- Violation/behavioural factors are also likely: Not following the rules can result in serious injury or death.

3b mobile boom

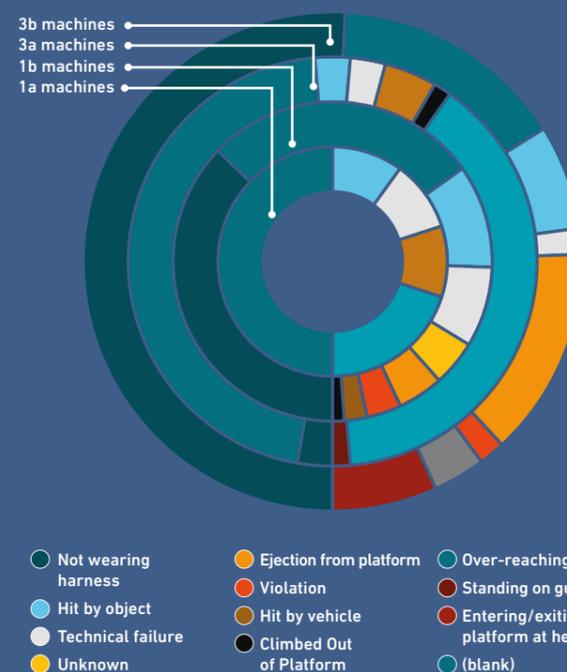
Not wearing a full body harness and/or not attaching a lanyard that is the correct length to the designated anchorage point is a likely contributory factor in relation to falls from the platform, resulting from factors such as:

- The operator or occupant being ejected from the platform after freeing a snagged platform or being struck/by or hit by passing vehicles or parts of trees or other materials falling on the boom.
- Partial overturn of the platform and subsequent ejection from the platform; probable causation in these types of

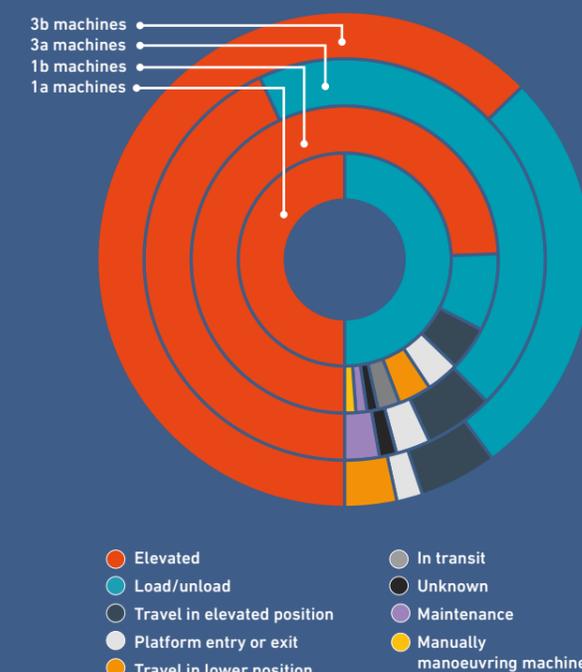
Falls from platform trends - total incidents by year



Machine type by probable causation



Machine type by configuration



incident are likely to include not using or incorrect use of PFPE. On some occasions it was the operator without PFPE who was ejected while the passenger remained in the platform.

Risk control:

- Always ensure the machine is cordoned off and no-one else is working above the MEWP or nothing can strike the boom or parts of it.
- Where risk assessment identifies it, always wear a fully body harness and short restraint lanyard. Positively clip on to the anchorage point supplied by the manufacturer.

- Challenge over-reaching. If operators or occupants are observed over-reaching or any part of the MEWP structure or standing on the guard-rails then procedural and management steps have been missed and need rectifying.
- Ensure materials and other machines cannot strike the boom or structure.
- Ensure that pre-use checks and periodic thorough examinations are carried out and are effective.
- Challenge dangerous behaviours. Remember to look out for one another.

RESOURCES

- ➔ IPAF Don't Fall For It! Safety Campaign
- ➔ IPAF Safe Use of MEWPs in Public Areas
- ➔ H1: Fall Protection in MEWPs leaflet
- ➔ E2: Exiting the Platform at Height leaflet
- ➔ IPAF Use of Personal Fall Protection Equipment (PFPE) Toolbox Talk
- ➔ IPAF Training

Electrocutions are a hidden risk in more ways than one

From the data we have received over the past 10 years we can see that up until 2016 there were relatively few reports of electrocutions, since then IPAF has started to receive more accurate information on the number of electrocutions in the industry, but there is a suspicion this is going under-reported with regard to near misses.

The most likely locations to be fatally injured are in public areas or alongside roads. Commercial premises also show a number of electrocutions, while fatalities have also happened on construction sites, in workshops and yards (rental depot locations). Though the majority of electrocutions involve contact with an overhead power line, electrocutions have also been reported in workshops with overhead cranes and live buzz-bars.

Static boom or 1b type vehicles are the most common type of MEWP involved in electrocutions, almost 50% of all fatalities and major injuries involve this type of equipment. Just under one third (30%) of fatalities occurred on mobile boom or 3b type MEWPs. These machines are able to be driven while elevated, so additional care must be taken in case that brings the machine and operator into proximity with overhead lines.

From 1 January 2019 to 31 December 2021, there were 103 fatalities, two major injuries and five minor injuries involving electrocution. Across 2021, 27 people lost their lives to electrocution involving MEWPs, this is an increase on the previous year when there were 21 fatalities. In 2021 there were 23 reports from five countries.

Over the whole ten-year period, most reports came from the US, followed by Canada and the UK. The arboriculture industry is the primary industry where platform occupants have been electrocuted, mainly using type 1b MEWPs.



Analysis

As incident reporting increases across the world, it is expected so will the number of fatal electrocutions reported. IPAF continues to drive the message that we need all incidents involving electrocutions to be reported, this includes near misses, minor and major injuries, and fatalities. Without this data we do not get a true reflection on incidents in this industry. Electrocution is the second biggest killer in our industry. Falls from the platform lead to most deaths, but there is not much between them. As previously noted, electrocutions are nearly always fatal.

From the data we receive we can collate and identify the measures we need to put in place to reduce electrocutions globally, we can do this in the form of dedicated instructor-led training modules, technical data guidance, safety projects, Toolbox Talks and Andy Access posters.

This information is intended to educate all Users, operators, and supervisors of MEWPs to work safely and provide them with a more thorough understanding of the hazards involved when working in areas where there is a risk of electrocution. It is also worth noting that it is not just operators and occupants being killed –

even ground persons or spotters have been killed by arcing of electricity and/or while using ground controls to attempt to rescue people at height.

Planning

Operating MEWPs near overhead powerlines needs to be planned, supervised and executed correctly. All personnel involved with this type of work must be adequately trained. If this work is not planned or carried out safely there is a high risk of electrocution either from electricity which can arc from powerlines to the platform occupants or directly to

the MEWP. Machine selection for this type of work is also critical – insulated aerial devices (IADs) can offer more protection.

Static booms must be set up in an area prior to elevation, therefore the resulting injuries or fatalities could be due to a lack of an effective site survey or pre-operational risk assessment. 1b type machines take time to set up and reposition; accidents happen if this process is rushed.

Additionally, operators are sometimes unaware that overhead cables are carrying power, or powerlines are

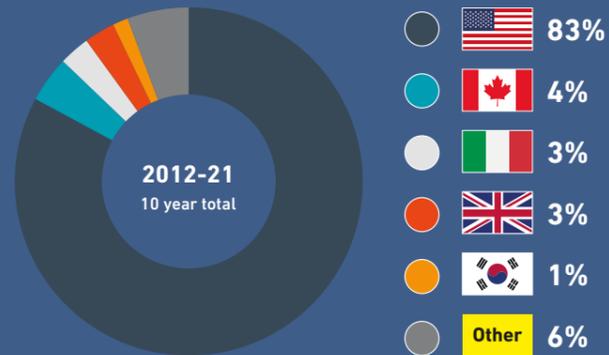
sometimes hidden from view in trees and vegetation. It's critically important that operators and platform occupants ensure that they observe the risk assessment, machines are set up in a safe manner and continual observations are maintained while operating.

MEWPs that have come into contact with powerlines can remain live in certain instances, this can lead to "Step Potential" and "Touch Potential" as the MEWP is energised. If a MEWP or platform occupant comes into contact with overhead power lines, it can be fatal regardless of whether the voltage is high or low.

People involved by machine category

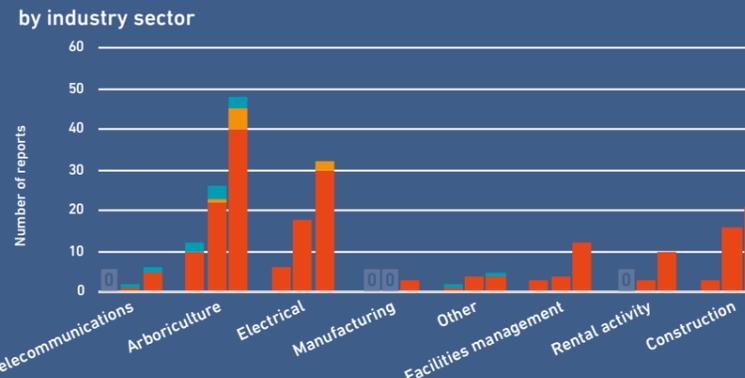
Machine Category	2021	3 year total	10 year total
1b	59% 16	54% 42	57% 78
3b	30% 8	32% 24	31% 43
3a	0% 0	4% 3	4% 6
1a	4% 1	1% 1	1% 1
Unknown	7% 2	9% 6	7% 11

Reports by country

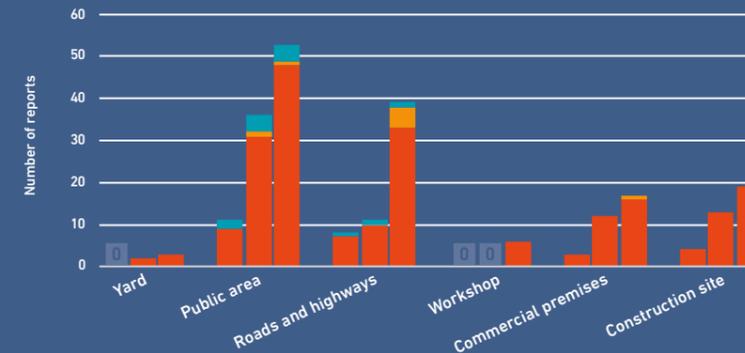


Lost-time incidents

Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total



by location



by machine configuration



People involved by industry sector

Industry Sector	2021	3 year total	10 year total
Construction	15% 4	24% 18	17% 24
Other	8% 2	6% 5	4% 5
Arboriculture	44% 12	34% 26	34% 48
Facilities management	11% 3	5% 4	9% 12
Rental activity	0% 0	4% 3	7% 10
Manufacturing	0% 0	0% 0	2% 3
Electrical	22% 6	24% 18	23% 32
Telecomms	0% 0	3% 2	4% 6

RESOURCES

- Safe Use of MEWPs in Public Areas (TE-1095-0222-1-en-GB).pdf (ipaf.org)
- IPAF Site Assessment Course
- Street Smart safety campaign
- IPAF tree worker guidance
- IPAF Andy Access posters
- Rescue procedure Toolbox Talk

Thorough planning can help to avoid stability issues

Stability issues and overturns have consistently been one of the top five causes of serious injuries and deaths since IPAF began recording accident reports.

Data shows that there were 166 reports of stability issues and overturns from 21 countries, including 74 fatalities, with 184 people involved in total. Reports showed the most overturns in the US, followed by the UK, Italy, and France. Most stability overturns happen in construction, followed by facilities management. There were 22 fatalities in construction over the 10-year period, in 14 countries. Types of categories of equipment that have seen the most overturns are 3b mobile booms (31%) and 1b type equipment (33%), such as vehicle-mounted or spider-type booms.

The main location for this type of incident is on construction sites, with a number of major injuries and deaths on commercial premises and in public areas, and also in rental settings such as yards and workshops. Roads saw more major injuries than fatalities, which may indicate machines losing stability on or near highways are likely to fall against other structures such as bridges, gantries, bus stops, which may prevent a full overturn.

The vast majority of fatalities and major injuries occur when the machine is in the elevated position, as well as travelling in the elevated position and also travel in the lowered position.

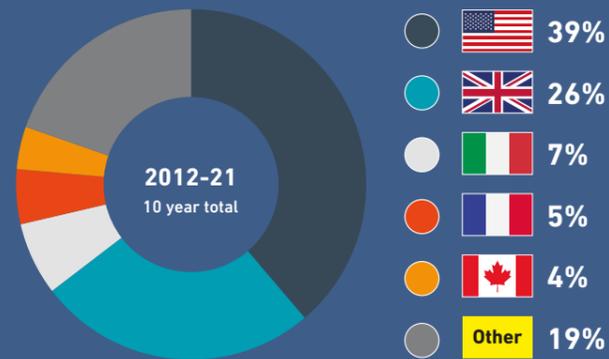
The person or occupation most involved in stability overturns were the operator or occupant in the platform, "other", technician or engineer and delivery driver. There were also a number of hire company operators and members of the public involved in this type of incident. Short and mid-term data largely align with the trends in the 10-year data.

People involved by machine category



* 2021 – goods hoist, unknown
 3-year total – 1b vehicle, mast climbing work platform, goods hoist
 10-year total – 1b vehicle, telehandler, mast climbing work platform, 2b goods hoist, no machine involved, 3b tracked, 1b towable, 1a

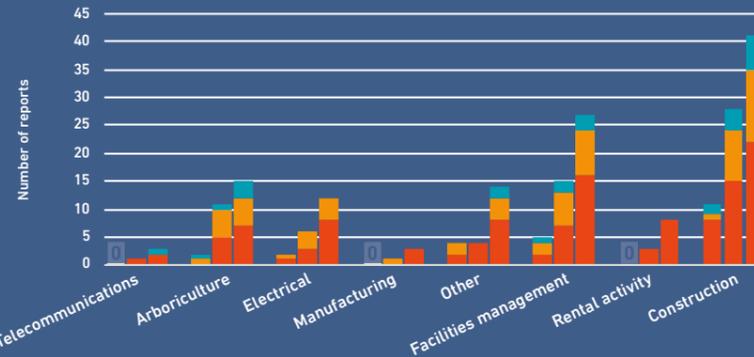
Reports by country



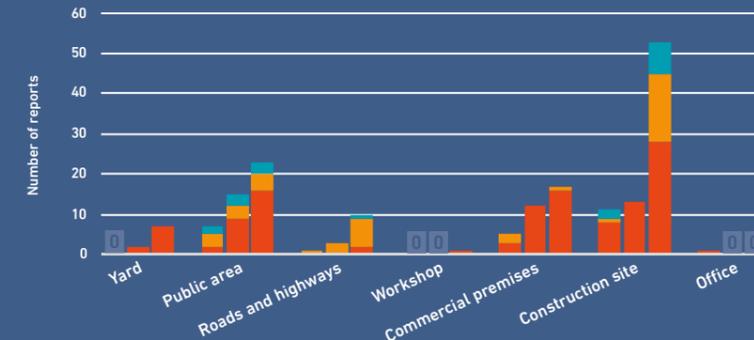
Lost-time incidents

Legend: Fatality (Red), Major injury (Orange), Minor injury (Teal)
 Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total

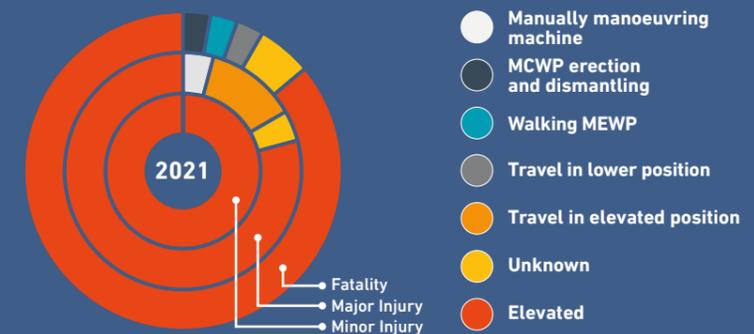
by industry sector



by location



by machine configuration



People involved by industry sector



Analysis

Whether mobile or static, MEWPs need to be set up on a suitable firm surface to ensure their safe operation. Over the past 10 years there have been many improvements to the design of this equipment by the manufacturers; it is now commonplace to find machines with on-board computers and built-in or remote diagnostic equipment to help ensure the safe set-up and operation of any type of MEWP. However, the safety systems the manufacturers build into the machines are not infallible and will not prevent the machine overturning if the ground underneath the machine is not adequate to

support it. The principles of thorough risk assessment to include understanding of the ground conditions and the suitability of the machine for the task in hand should never be overlooked.

To ensure stability and prevent overturns it is critically important that all MEWPs are set up properly, 1b type machines are fitted with stabilisation systems ie jacks, outriggers, and stabilisers. It is imperative that these stabilisation systems are set up in accordance with the manufacturer's instructions, and that where the machine needs to be repositioned to conduct any task that this is done according to the recommended operating procedures.

Planning

All MEWPs rely on the condition of the ground on which they stand for their stability. This applies equally to those which require the use of jacks or outriggers and those which are drivable, ie operate on wheels. Poor ground may well settle when subjected to additional load borne through MEWP wheels or outriggers and this in turn will result in the machine being out of level and becoming unstable. Consequently, it is essential that an assessment of ground conditions across the whole operating area is made before travelling, using or setting up a MEWP on any surface.

Proper assessment of ground conditions is equally important for self-propelled MEWPs, as these machines can be driven along the ground with the platform raised, as for MEWPs that require setting up on outriggers before use. Moving from hard ground to soft in a self-propelled machine might cause the machine to go out of level and lose stability/overturn.

Ground conditions should also be considered when moving stowed MEWPs, as soft ground may result in the machine becoming bogged down with consequent recovery costs, delays and loss of production. Driving MEWPs even in the lowered or stowed position over poor or unstable ground can

cause them to lose stability and overturn, or if travelling in a 3b boom-type platform it can lead to the catapult effect, causing the platform occupant(s) to be ejected if not wearing the correct PFPE.

During use it is important that operators use the level indicators provided on platforms and take notice of any warnings provided. If the level indicator indicates the operating limits are exceeded, the operator following the manufacturer's instructions on the correct process, and then and reset the machine in a level position. If suspected that the outriggers could sink for any reason, regular checks should be made on machine level and adjustments made accordingly.

RESOURCES

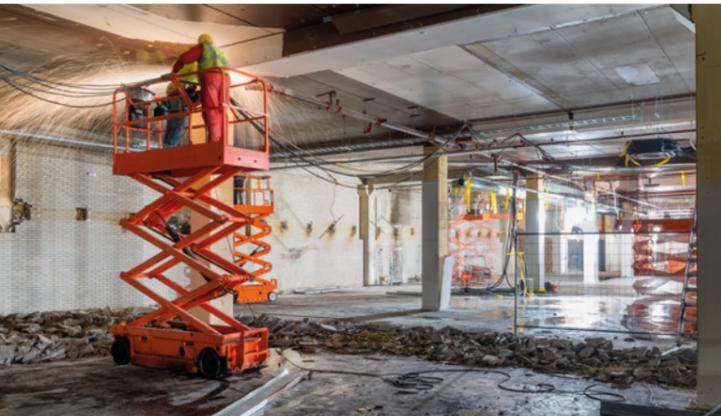
- Back to Basics campaign
- Ground conditions Toolbox Talk
- IPAF Site Assessment Course
- Andy Access posters
- Never Attach a Banner Toolbox Talk
- IPAF management training

What is entrapment and why is it nearly always fatal?

Entrapment is a situation where MEWP platform occupants become trapped between the controls or guardrails and an immovable object or external structure. Situations like these can occur suddenly and in some circumstances the operator may make the situation worse by operating controls incorrectly in an attempt to free themselves from the entrapment situation. Another factor could include not having an appropriate person to effect a rescue from the ground.

Reporting from the year 2020 showed the highest number of entrapment reports, and the trend fell slightly in 2021. But since 2016 it is evident the numbers have been higher than in previous years. This is no doubt owing in part to an increase in reporting, amid raised awareness in the industry about reporting and how it can improve training and technical guidance. Most entrapment situations have been reported from the US, Canada, the UK, and France. Construction experienced the most entrapment situations, followed by facilities management.

The data indicates that more people seem to have been killed in incidents involving a boom or 3b-type equipment than on other machines, with scissor lift or 3a-type machines second. The vast majority of personnel involved in this type of incident is the occupant or operator, though there are also a significant number of delivery drivers, technicians/engineers and rental company staff involved.



Analysis

Over the past 10 years (2012-21) there were 110 reports from 16 countries. From these reports we have verified that there were 111 people involved and 98 people died. In the past three years (2019-21) there were 50 reports from 14 countries. From these reports we have verified that there were 51 people involved and 46 deaths. Well over half (57.5%) of entrapments occurred in the US, mostly in the construction industry. The facilities management sector is not far behind with 21.9% of deaths.

Planning

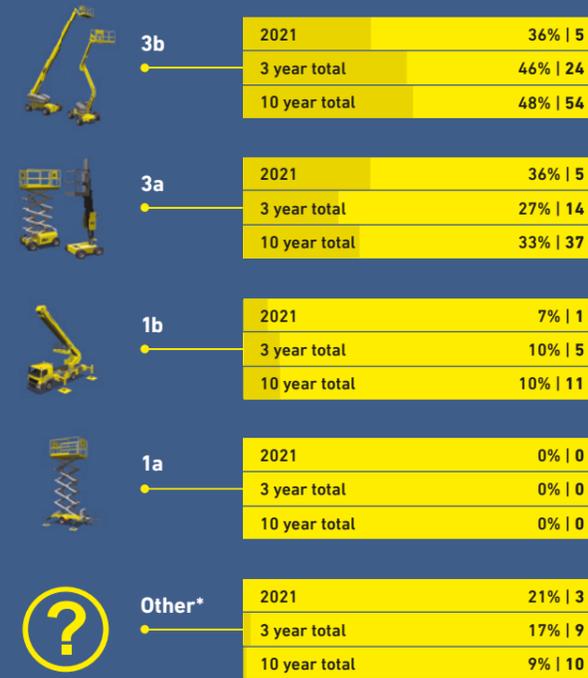
Can entrapment be prevented? The guardrails offer primary protection for platform occupants. Not all secondary guarding devices disable or reverse functions, customers still want frames that are physical and not mechanical. Primary guarding also comes in the form of a foot or function-enable switch that will prevent any functions from operating. MEWP operators should have received the correct training and instruction in the type of secondary guarding fitted to the MEWP.

The MEWP operator and platform occupants play a key part in their own safety by being aware of their surroundings and what entrapment hazards are present. These may not be directly overhead but could also be at ground level. If a MEWP is travelling inside a building, be aware that occupants can become trapped by low-hanging obstacles such as joists or beams. Work at height needs to be properly planned, supervised, and carried out in a safe manner. Ground rescue personnel should also be familiarised with any MEWP ground control functions and be able to lower the platform in the event of an emergency.

Reducing the number of such incidents requires the combined efforts of manufacturers, management, hirers, rental companies and operators. In recent years manufacturers have made advances in safety and technical innovations. Various manufacturers and industry experts are working together to standardise MEWP platform controls in order to prevent unintended movement. There have also been advances in secondary guarding devices, these have been predominately for boom-type MEWPs but recently there have been developments for vertical-type MEWPs.

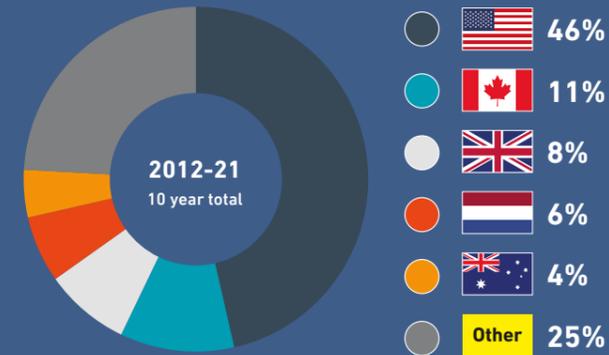
Always carry out risk assessments when conducting MEWP operations on site. MEWP operators should be made aware of potential entrapment situations. Supervisory staff should be trained in the safe use and management of MEWPs. A nominated ground rescue person should always be available to lower the MEWP to the ground in the event of an entrapment situation. Rental companies should ensure all machinery provided to their customers has the appropriate information and instruction on the safe operation of the equipment. A MEWPs should be delivered with an operator's manual.

People involved by machine category



* 2021 – Unknown
3-year total – unknown, telehandler
10-year total – unknown, telehandler

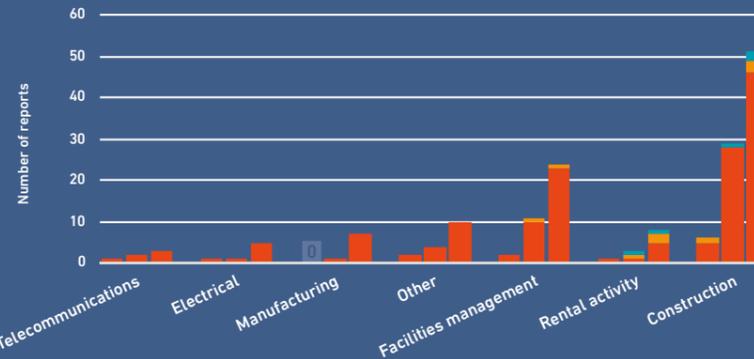
Reports by country



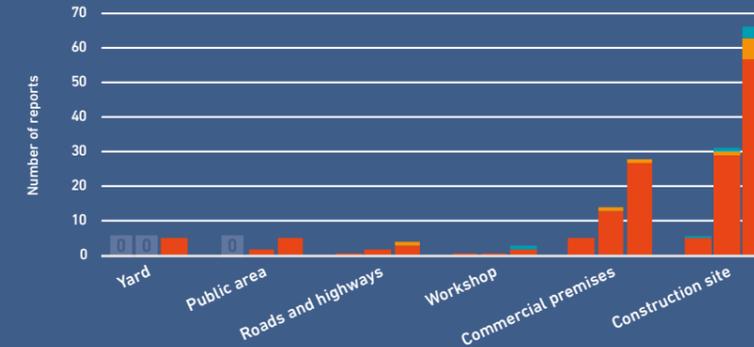
Lost-time incidents

Legend: Fatality (Red), Major injury (Orange), Minor injury (Teal)
Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total

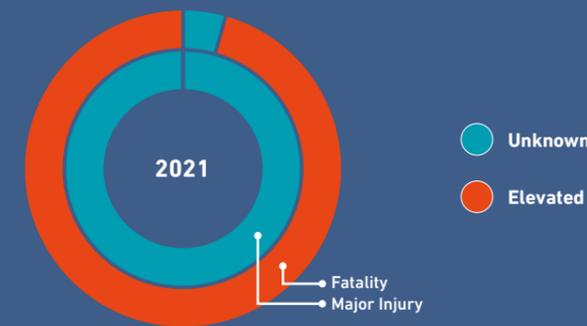
by industry sector



by location



by machine configuration



People involved by industry sector



RESOURCES

- Back to Basics campaign
- Plan Ahead campaign
- Walking the MEWP Toolbox Talk
- Secondary guarding guidance
- Overhead obstructions Toolbox Talk
- Rescue procedure Toolbox Talk
- ISO:21455 – Mobile elevating work platforms – Operator's controls – Actuation, displacement, location and method of operation

MEWP mechanical or technical failures are a growing concern

Machine mechanical or technical failure isn't typically one of the most common causes of accidents when using MEWPs, but over the past 18 months there has been a marked increase in the number of reports. Is this down to wider and more accurate reporting, or have factors such as increased pressure on maintenance regimes and longer retention of older machines during the pandemic come into play?

Mechanical and technical failures can occur in different ways. Operators have been known to cause damage to MEWPs by not knowing and understanding machine safe operating systems. Damage can also occur when there is complacency by the operator taking things for granted and not checking surroundings.

Maintenance regimes should be proportionate to the conditions and usage to which MEWPs are being subjected. If machines are to be used in especially adverse conditions then the competent person should be notified.

Over the past 10 years there have been 39 fatalities resulting from mechanical or technical failures. In total there were 31 reports from 12 countries. The industry sector with the most fatalities was construction, accounting for just over half of all fatalities, while arboriculture accounted for 20.5%.

In the past three years there were 124 reports from 12 countries, including 23 fatalities – almost double (91.7%) the ten-year yearly average. Looking at 2021, there were 65 reports from seven countries, with 66 people involved, 10 of whom died, possibly highlighting that only the most serious failures are reported.



Analysis

Safety and technical innovations by MEWP manufacturers are making this equipment safer to use and more reliable. However, it is important to note that MEWPs must be inspected before use and periodically throughout their time in service.

Manufacturers will specify mandated periodic maintenance based on hours used as well as the items that must be checked at key intervals such as annual and major inspections, this information can be found in the MEWP service manual. There was a seemingly sharp increase in the number of reports

of mechanical or technical failures of machines received in 2021 compared to previous years. As the pandemic reached its peaks in 2020 and 2021, did this impact the availability of MEWP rental company staff to carry out scheduled inspections and servicing of equipment?

Did an increase in intervals between inspections and safety certifications lead to an increase in machine failures? Many companies have said that availability and increased lead times on new machines meant they kept older MEWPs in service longer than intended, which could also have been a factor.

Planning

One way to reduce the likelihood of a mechanical or technical failure is to carry out regular inspections of the equipment by qualified personnel. Failure to carry out inspections and ongoing maintenance can result in mechanical or technical failures. There are different types of inspections that must be carried out on a MEWP: Pre-hire inspections carried out by MEWP rental companies; pre-use inspections by an operator; periodic maintenance inspection by a qualified engineer/technician; routine and non-routine maintenance carried out by the rental company; major

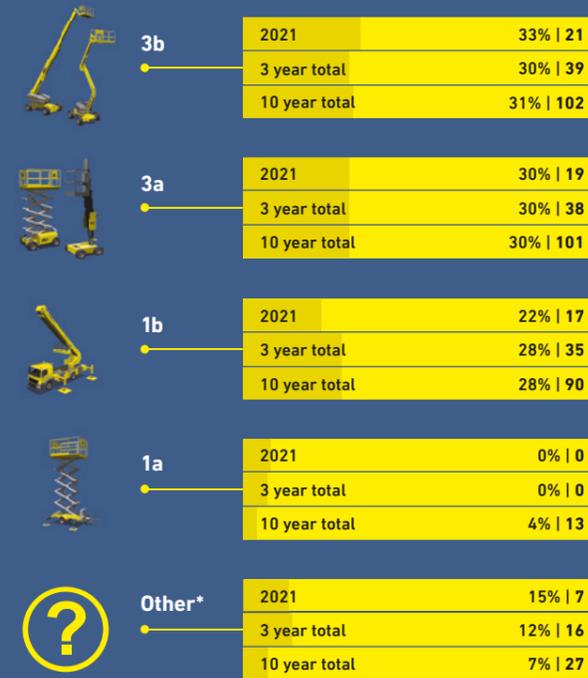
inspections carried out by a qualified engineer/technician; Original Equipment Manufacturer (OEM) service instructions and safety bulletins implementation; mandatory parts replacement by a qualified engineer/technician.

The frequency of periodical inspections depends on several factors: The country you are in, as they may stipulate the time between inspections, eg 90 days, six-monthly or annually; manufacturer information contained in the MEWP service manual for inspections, servicing and maintenance; the machine's working environment; the number of working hours/days since the last inspection; the age and

condition of the machine. The frequency of inspections should be increased depending on the above criteria and at the discretion of the qualified person responsible for carrying out the inspections. Countries that lack guidance on inspection in the form of regulations, codes of practice or standards are likely to have an increased number of incidents of this type.

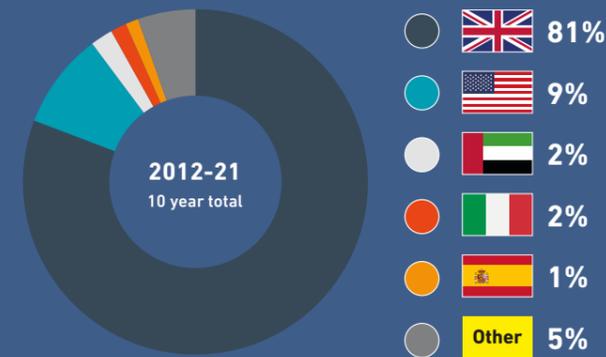
It is imperative MEWP inspections are carried out – complacency will lead to incidents and accidents occurring, this can be prevented by carrying out pre-use and periodical inspections. MEWPs that are regularly inspected are less likely to be subject to mechanical or technical failures.

People involved by machine category



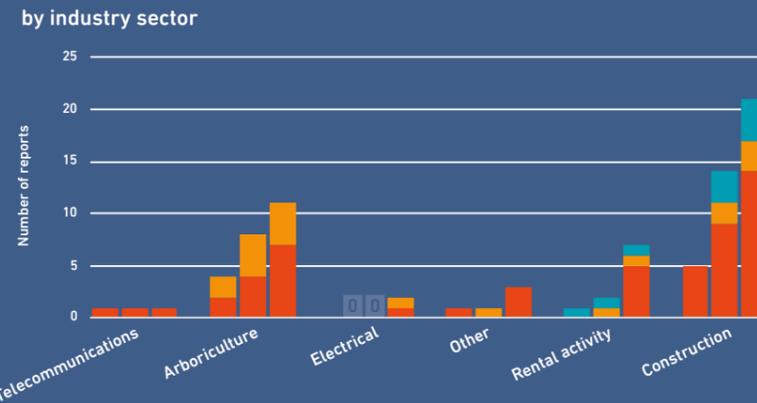
* 2021 – mast climbing work platform, unknown, 2b
 3-year total – unknown, personnel hoist, mast climbing work platform, no machine involved, 2b
 10-year total – unknown, personnel hoist, mast climbing work platform, telehandler, 2b

Reports by country

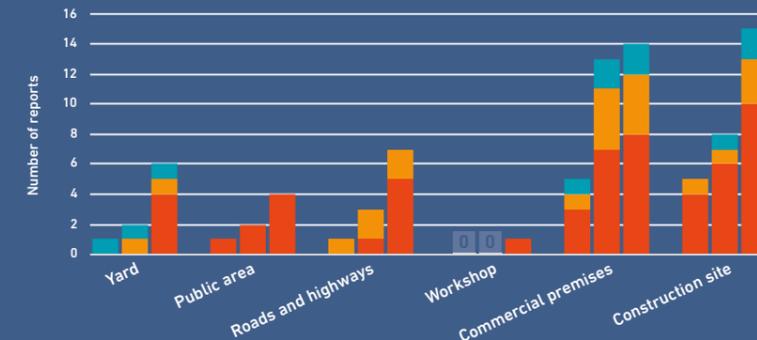


Lost-time incidents

Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total



by location



by machine configuration



People involved by industry sector



RESOURCES

- IPAF Guidance on Buying a Pre-Owned MEWP (TE-915-0119-1-en).pdf
- IPAF pre-use inspections Toolbox Talk
- IPAF pre-use inspections Andy Access poster
- OEM service instructions and safety bulletins
- MEWP manufacturer's owners guidance/handbook

Is complacency a key cause of MEWPs being struck?

Positioning machines correctly in safe areas minimises the risk of being struck by road vehicles, other plant and equipment. If positioned safely and segregated from traffic and pedestrians, the risks associated with using MEWPs in public areas or alongside roads can be mitigated and managed effectively.

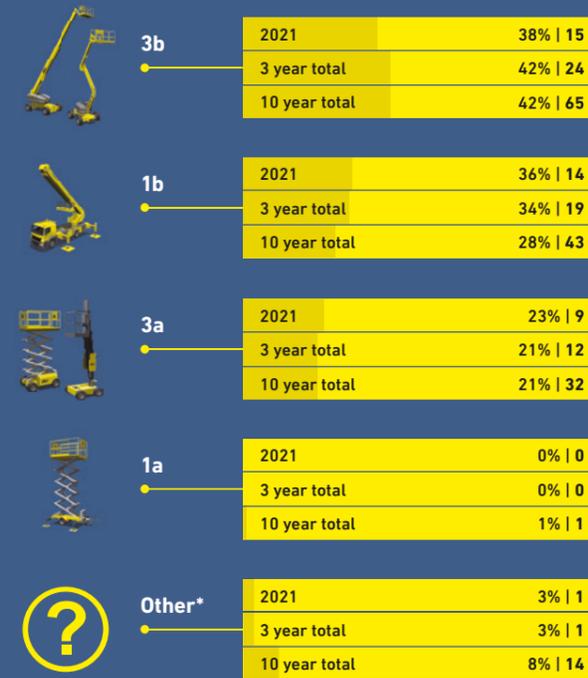
Looking at the 10-year data, IPAF received 148 reports of this type of incident from 20 countries, which involved 155 people and 33 fatalities. Just over half (52%) of all the reports came from the UK, while a quarter (25%) came from the US.

The data highlights that those involved in this type of incident are twice as likely to be killed than injured if a MEWP is struck by another vehicle or machine. Most of these incidents occur on or alongside roads, while commercial premises also feature. Construction sites are third on the list with public areas fourth.

Most fatalities have occurred in the facilities management followed closely by construction, arboriculture, manufacturing, logistics and electrical sectors.

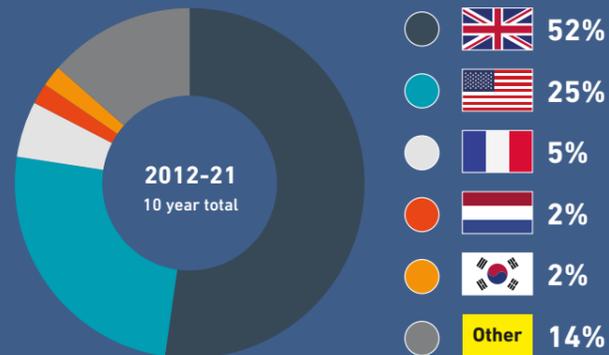


People involved by machine category



* 2021 – Unknown
3-year total – unknown, no machine involved
10-year total – unknown, no machine involved, telehandler

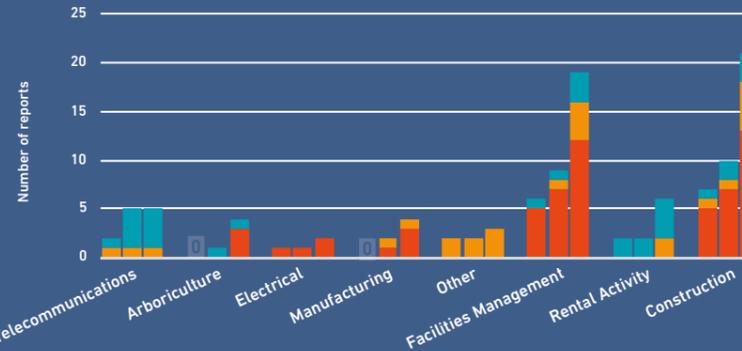
Reports by country



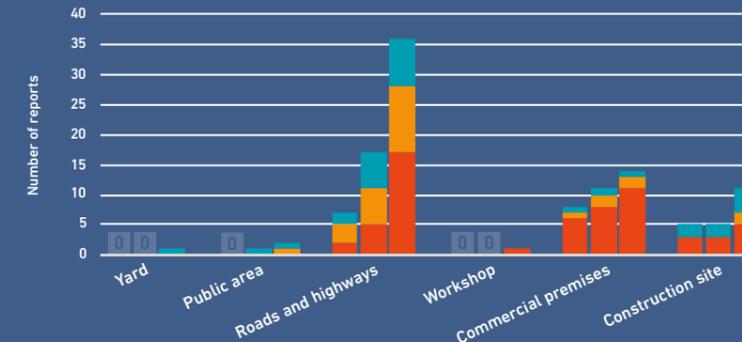
Lost-time incidents

Legend: Fatality (Red), Major injury (Orange), Minor injury (Teal)
Columns: 1 = 2021; 2 = 3-year total; 3 = 10-year total

by industry sector



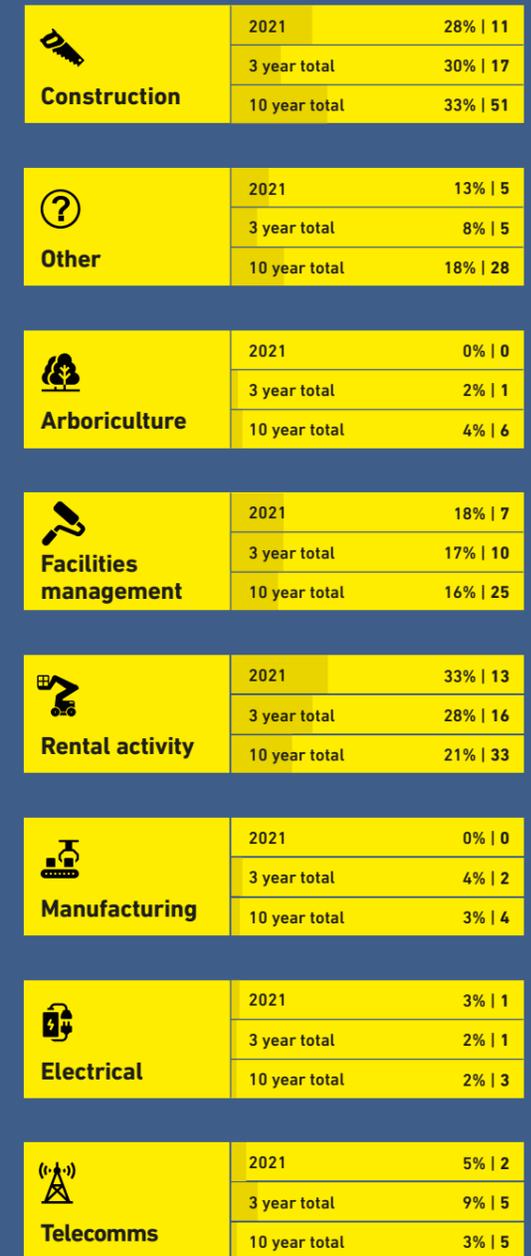
by location



by machine configuration



People involved by industry sector



Analysis

The increase in this type of incident is likely down at least in part to an increase in reporting. In one way it is positive that we are seeing increasing numbers – it means these incidents are now being reported whereas early on in IPAF's reporting project they were not. The increased focus on this type of incident in recent years led directly to IPAF developing a new Safe Use of MEWPs in Public Areas document.

It is worth noting that overall rental activity matches construction in terms of this type of incident, with rental company operators,

drivers, loading and unloading of equipment all being at heightened risk. This is likely down to the typical locations that operations such as delivery or collection of machines are taking place, such as alongside service roads or public highways and highlights the need for clients to plan the delivery and off-loading better.

Planning

Most reports have been from the construction sector accounting for 33% of all reports. These types of incident are most likely, where risk is heightened if there are multiple different plant machines,

another consideration is where part of the MEWP protrudes beyond site barriers. The next most common end use is rental activity, which includes machines being loaded, unloaded and also operators being struck during set up or hit by vehicles while manoeuvring on or near the highway. Extra care should always be taken when moving or operating on or alongside roads.

Over the full 10-year period, the most likely machine to come into contact are mobile boom-type (3b) MEWPs. This is most likely owing to the potential for overwing, the length of the MEWP and potential for coming into contact with other vehicles or plant.

The next category is static boom (1b) type machines, for many of the same reasons as a 3b machine is more susceptible to this incident type but as these are static when in use, we have identified platforms, outriggers, or boom sections being struck as the main likely causes.

Next is mobile vertical (3a), which is a little harder to understand, given that these platforms cannot slew or jib only elevate and lower vertically. As with other MEWP types, clear demarcation of equipment operating zones and safe segregation from other plant and vehicles would be key to preventing these types of incident.



RESOURCES

- IPAF Safe Use of MEWPs in Public Areas
- Street Smart campaign
- IPAF Site Assessment Course
- Ground conditions Toolbox Talk
- Back to Basics campaign
- Plan Ahead campaign
- IPAF management training

Rental activity

Using data to help keep our industry safe

Since IPAF began gathering incident reports, by far the greatest number of reports are from rental companies, though when considering the total number of hours worked, incidents remain low. These have been reported from 24 countries, involving 2,284 people and resulted in 27 fatalities.

Rental companies tend to be IPAF members and as a result are more likely to report – indeed in the UK, Ireland and the Middle East region it is mandated that they do. However, there is no room for complacency, and the data does indicate that certain parts of day-to-day rental activity, such as loading and unloading machines, is indeed more risky than the industry should consider acceptable.

We have a lot to thank our rental companies for – nothing more so than the data they have been giving to the IPAF reporting project since day one. When looking at all reports, from 1 January 2012 to 31 December 2021 filtered by rental company only, it is no surprise to see the bulk of the data over that period is from the UK, as this was mandated as a condition of IPAF membership in 2012 by the IPAF UK Country Council and it was some time before other countries and regions followed suit.



Analysis

Why are lost-time incidents involving rental company staff happening much more frequently on construction sites (double that of yards and workshops)? What are the safety protocols and measures in place on rental company premises that are helping to reduce the risk of incidents occurring? Are these being adequately extended or replicated when rental company operatives are on external sites? By focusing on rental activity, and the risks and counter-measures that are associated, as an industry we can help to keep rental

company delivery drivers, demonstrators and/or maintenance workers safe.

When looking at the occupations involved in the reports of incidents occurring during rental company activity it shows a fairly even split between delivery driver and technician/engineer. Operator occupants account for 10% of all incidents, with 6.7% described as hire company operators.

In terms of machine configurations/operations, the data shows that most rental activity incidents occur during maintenance and loading or unloading. As with other incident types, there are a higher number of fatalities when the

machine is in the elevated position. In terms of the fatal incidents, most deaths occur during loading or unloading, followed by maintenance and travelling the MEWP in an elevated position.

In terms of deaths to MEWP rental industry employees from electrocutions, in the past 10 years there have been 10 reported fatalities from the US and Canada. The most common type of machine for this to happen on is a mobile boom (3b) followed by a static boom (1b vehicle). These incidents occurred mainly in workshops, but there were also incidents in yards and in public areas. In the past three years there have been three

reports of fatal electrocutions from the US. The categories of personnel killed were either MEWP engineers/technicians (66.7%) or delivery drivers (33.3%).

Planning

The data indicates that falls (slipped, tripped or fell from the same level) are the most common reasons for major and minor injuries in the rental sector. It is likely that many of these are occurring both in workshops and on the rear of delivery vehicles. This highlights that delivery drivers should be mindful of “good house-keeping” on the rear of

their vehicles, including load-securing equipment and that they should also take extra care when walking on the back of the vehicle with equipment already secured. The next most common type of accidents are crushing, trapping and pinching.

In 2020, IPAF updated its load/unload training course based on trends identified via global incident reporting. Given the higher-than-expected incidence of electrocution fatalities involving rental activity, IPAF will look specifically at updating guidance for rental company workers regarding electrocution risks when reviewing safety priorities over the next few years.

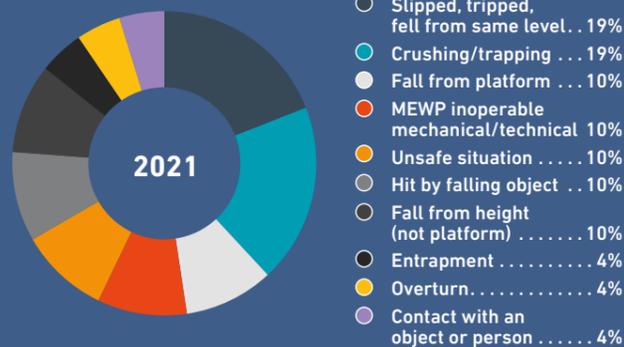
RESOURCES

- ➔ IPAF Safe Loading & Unloading Training Course
- ➔ IPAF Safe Workshop Servicing & Repair of MEWP Toolbox Talk
- ➔ IPAF ‘Walking The MEWP’ Toolbox Talk
- ➔ IPAF Safe On-site Servicing of MEWPs Toolbox Talk
- ➔ IPAF Avoiding Trapping/Crushing Injuries: Best Practice Guidance For MEWPs

Rental activity vs location

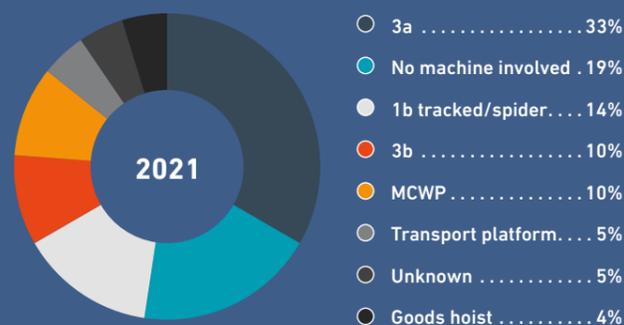


Rental activity vs accident type



* Other – fall from height (not platform), entrapment, hit by falling object, electrocution, MEWP inoperable mechanical/technical, hit by vehicle or machine, RTC vehicle accident, transport, bump - person walks into object/machine, ground condition instability

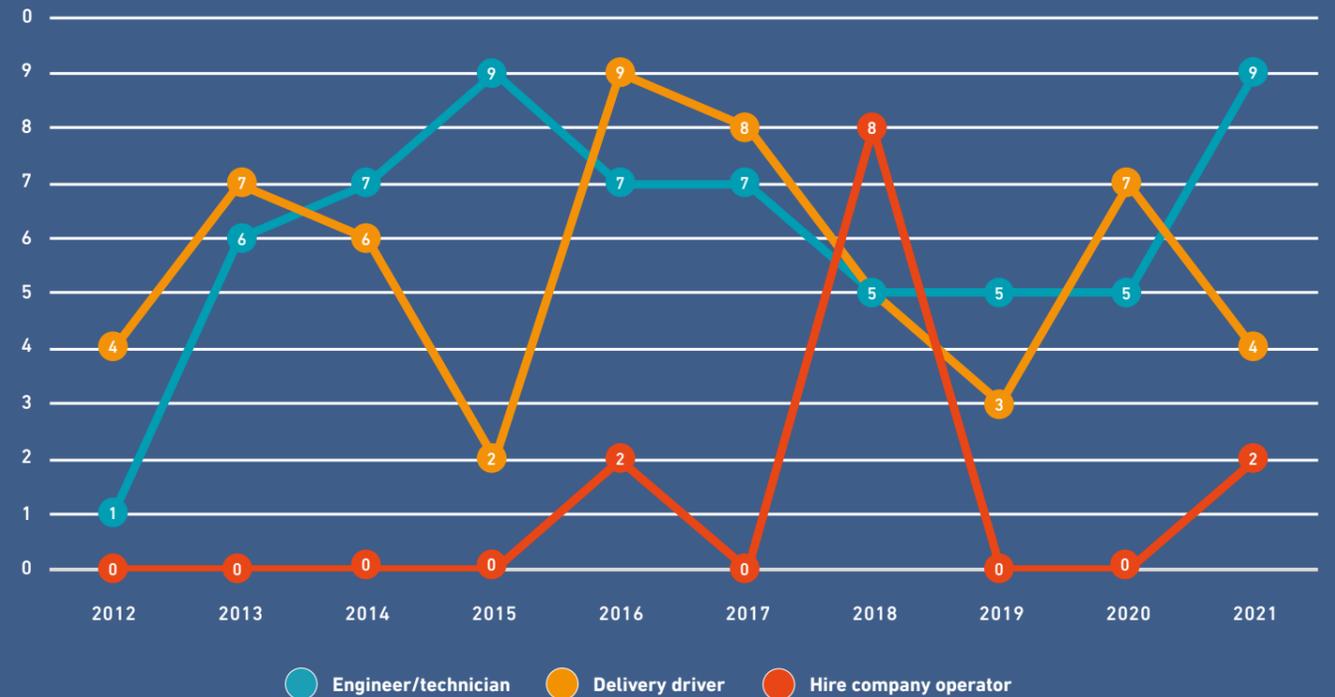
Rental activity vs machine type



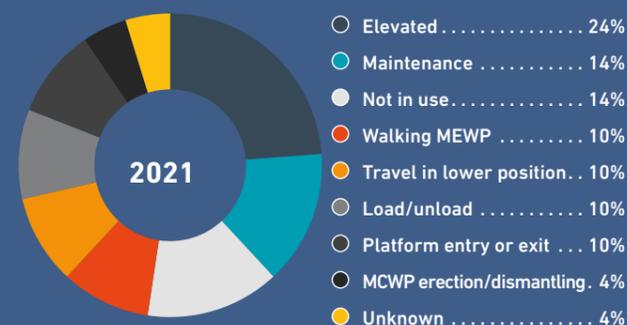
* Other – transport platform, goods hoist, 1a PAV

Rental activity fatal/major injuries

Involving: Engineer/technician, Delivery Driver and Hire company operator



Rental activity vs machine configuration



* Other – manually manoeuvring machine, set up/stowing, unknown, mcwp erection and dismantling

Rental activity total reports by year





www.ipafaccidentreporting.org

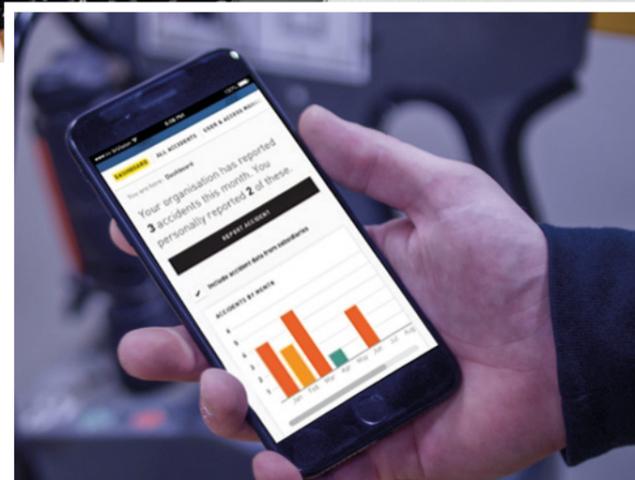
IPAF and its members analyse anonymised data on incidents involving powered access to identify areas of risk and common trends which informs guidance, training, and safety campaigns. We aim to increase our understanding of working practices and reduce incidents in every country. Reporting is not restricted to IPAF members; any person or organisation can report an incident. Since this report was published last year, IPAF has launched ePAL, a mobile app for operators and managers, which enables quick on-the-spot reporting direct to the IPAF portal of all incidents including near misses.

How to report

All accidents, incidents and near-misses can be reported quickly and easily at www.ipafaccidentreporting.org via desktop or laptop PCs, most web-enabled mobile devices, or through the IPAF ePAL app (www.ipaf.org/ePAL) for operators and supervisors. Please register first to report accidents on the database. Reports can also be made anonymously via the portal. Companies wishing to have multiple persons reporting accidents should appoint a nominated person (a senior person who will manage reporting). This nominated person should register first in the company name. Once registered, the nominated person will be able to give others access to report accidents and be able to track their accidents and manage their incident records. Information entered into the database will be kept confidential and will be used strictly for the purposes of analysis and improving safety.

What is reported

All reported incidents involving powered access 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 or damage to machines or structures, yet still represented a potentially dangerous situation for machine occupants or bystanders.



The machines

The report analyses incidents that occurred when using, delivering and maintaining Mobile Elevating Work Platforms (MEWPs). IPAF also collates incidents involving other machinery including Mast Climbing Work Platforms (MCWPs), all types of construction hoists and telehandlers.

Who can report?

Anyone involved in working at height can report an incident to the IPAF portal. The data presented in this report is based on information collected either directly reported via the IPAF portal; obtained by IPAF staff worldwide; using data from regulatory bodies; and through information collated from media reports. IPAF will soon offer a special customisable dashboard for all members reporting to benchmark their companies performance against regional, national and global data.

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 is removed prior to analysis by IPAF and its committees, and thereafter remains redacted. 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 full IPAF privacy policy can be found at www.ipaf.org/privacy

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.

Visit www.ipaf.org for local office information

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 members' safety analysis dashboard. For more information about becoming a member of IPAF visit www.ipaf.org/join

Report an accident or near miss: www.ipafaccidentreporting.org

Definitions

GENERAL TERMS:

PERSONAL FALL-PROTECTION EQUIPMENT (PFPE)

This includes full-body harnesses and fall-restraint lanyards, recommended for use in all boom-type MEWPs.

INSULATED AERIAL DEVICE (IAD)

This is a specialist machine designed to work at height in proximity to overhead power lines as an extra precaution against electrocution.

TOUCH POTENTIAL

If a MEWP contacts an overhead power line it becomes electrified, and the current seeks to reach ground. If someone touches the machine they could become the path of the current to earth through their body.

STEP POTENTIAL

The surface of the ground around the MEWP is also electrified/ energised and this can create concentric rings of decreasing voltage. If a person straddles one or more of these rings, that can lead to electrocution.

RENTAL ACTIVITY

Delivery, collection, loading and unloading machines, manoeuvres in depots, cleaning and maintenance of machines

LOST-TIME 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 incidents, the following definitions may apply:

MAJOR INJURY

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

MINOR INJURY

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

INCIDENT CATEGORIES HIGHLIGHTED WITHIN THIS REPORT:

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.

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Mark Keily

QHSE Director, Sunbelt Rentals UK and Chair, IPAF ISC

Alana Paterson

Head of HSE, Nationwide Platforms and Vice Chair, IPAF ISC

Rob Cavaleri

Regional Training Safety and Compliance Manager, Manlift Middle East

James Clare

Principal Product Designer, Niftylift

Kevin O'Shea

Director of Safety and Training, Hydro Mobile

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.

DEFINITIONS OF DIFFERENT CONFIGURATIONS:

ELEVATED

The work platform is in an elevated position or is being moved into the elevated position. There are people in the platform.

LOAD/UNLOAD

The MEWP is moved on to the transport vehicle, exiting the MEWP, tying down the MEWP and climbing down from the transport vehicle.

TRAVEL IN LOWER POSITION (STOWED)

Travel of the MEWP with the lift structure lowered. The work platform may be elevated slightly, for example by the jib, to improve the visibility of the operator.

MEWP INOPERABLE – MECHANICAL/TECHNICAL ISSUE:

The MEWP is inoperable or cannot be used safely. This includes components disconnecting (eg covers or bolts coming loose, wheels becoming detached from chassis), hydraulic, electrical or software faults.

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.



***Promoting the safe and effective
use of powered access worldwide***

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