

Working From Heights Safely – A Comprehensive Overview for EASA Part 145 Organizations

Sofema Online (SOL) www.sofemaonline.com considers the key issues to be addressed when working from heights.

General Introduction

In an era where working at heights remains a necessity across various industries, from Aircraft Line to Base Maintenance, the importance of safety cannot be overstated.

Throughout "Working from Heights Safely" we consider the need to equip individuals with the critical knowledge and skills needed to navigate the risks of working at elevated levels.

It is important to understand the inherent risks and legal standards related to the practical application of safety measures and equipment associated with working from heights

Whether you're stepping onto a scaffold for the first time or looking to update your safety knowledge, it is essential to ensure you have a solid understanding of safety protocols, risk assessment, and the use of protective equipment when working at heights.

Key Benefits to be aware of include the need to:

- Understand the risks and hazards associated with working at heights.
- Be familiar with the legislation and standards related to working at heights.
- Know how to use personal protective equipment (PPE) correctly.
- Be able to conduct risk assessments for working at heights.
- Understand emergency procedures and rescue plans.

What is Considered Working at Heights?

Working at heights encompasses any work where there is a risk of a fall liable to cause personal injury.

- This type of work is common in many industries including Aviation Maintenance where workers may operate on roofs, ladders, scaffolds, and other elevated platforms.
- The inherent risks of working at heights demand stringent safety measures to prevent accidents and injuries.

Overall, the key to managing the risks associated with working at heights lies in rigorous risk assessment, the implementation of comprehensive safety measures, adherence to legal requirements, and fostering a culture of safety within organizations.

Consider the following challenges, best practices, and the legal framework surrounding working at heights.

Challenges

- **Risk of Falls:** The primary challenge is the risk of falling, which can lead to severe injuries or fatalities.
 - Factors contributing to falls include unstable working platforms, failure to use personal protective equipment (PPE), and poor weather conditions.

- **Training and Awareness:** Adequate training on safety practices and the proper use of equipment is crucial.
 - Lack of training or awareness about the risks can increase the likelihood of accidents.
- **Equipment Maintenance and Inspection:** Ensuring that all safety equipment and work platforms are in good working condition is a challenge.
 - Faulty equipment can be a major cause of accidents.
- **Weather Conditions:** Outdoor work at heights is significantly impacted by weather conditions.
 - Rain, wind, and extreme temperatures can affect worker safety and equipment stability.
- **Psychological Factors:** Fear of heights (acrophobia) can impact the performance and safety of workers.
 - Addressing these psychological challenges is important for ensuring the well-being of workers.

Best Practices

- **Risk Assessment and Planning:** Before starting work at height, conduct a thorough risk assessment to identify potential hazards.
 - This should inform the planning and implementation of safety measures.
- **Use of Appropriate PPE:** Workers should be equipped with the necessary PPE, such as harnesses, safety nets, and guardrails.
 - Proper use of PPE is essential for minimizing the risk of injury.
- **Training and Competence:** Workers should receive comprehensive training on safe working practices,
 - the use of equipment, and emergency procedures. Ensuring that workers are competent to carry out their tasks safely is critical.
- **Regular Maintenance and Inspection:** Safety equipment and work platforms should be regularly inspected and maintained to ensure they are safe to use.
- **Emergency Preparedness:** Have clear procedures in place for emergency situations, including rescue plans in case of falls.

Legal Requirements and Standards

Legal requirements for working at heights vary by country and region but generally include regulations and standards designed to protect workers.

- **Regulatory Framework:** Most countries have specific regulations that govern working at heights, outlining employer responsibilities, safety standards, and worker rights.
- **Safety Standards:** There are often detailed safety standards that prescribe the types of safety equipment, training requirements, and procedures for working at height.
- **Inspections and Compliance:** Regulatory bodies may require regular inspections and compliance checks to ensure adherence to safety standards.
- **Reporting and Investigation of Incidents:** Employers are typically required to report accidents and near-misses, and there may be investigations to determine causes and implement measures to prevent future incidents.

Working From Heights Safely – Understanding Risks and Hazards

Introduction

Working from heights involves significant risks, and understanding these risks is the first step towards mitigating them.

Through diligent risk identification, learning from past accidents, and the implementation of robust preventive measures, it is possible to greatly reduce the incidence of falls and injuries. Continuous effort, education, and adaptation to new safety standards are essential to protect workers effectively.

Understanding Risks and Hazards

Understanding Risks and Hazards is pivotal in cultivating a deep awareness among participants about the potential dangers they face while working at heights.

Working from heights involves performing tasks above the ground level, which inherently includes risks that can lead to falls, injuries, or even fatalities.

Understanding and mitigating these risks is crucial for ensuring the safety of workers.

Consider the following:

- **Falls from Edges:** One of the primary risks is falling from the edges of roofs, scaffolds, or open floors.
 - Proper edge protection and the use of guardrails can mitigate this risk.
- **Unstable Working Platforms:** Working on unstable surfaces such as ladders that are not securely positioned can lead to falls.
 - Ensuring stability and using platforms designed for the task can help prevent accidents.
- **Weather Conditions:** Adverse weather conditions, such as high winds or wet surfaces, increase the risk of falls.
 - Monitoring weather conditions and scheduling work accordingly can reduce risks.

Identifying Risks and Hazards

Identifying risks involves assessing the work environment and the tasks to be performed. This includes:

- **Worksite Inspection:** Regularly inspecting the worksite for potential hazards such as unstable surfaces, unprotected edges.
- **Task Analysis:** Analyzing the tasks to identify any actions that may increase the risk of falls, such as carrying heavy loads that might affect balance.

Discussion on Recent Accidents and Lessons Learned – (reference [Aviationweek.com](https://aviationweek.com))

In 2022, the U.S. aircraft maintenance sector experienced a notable increase in severe injuries among mechanics, with the number of severe cases doubling from the previous years' averages.

- A total of 30 severe injuries were reported, marking the highest annual figure since such data began being recorded in 2015. This surge in accidents comes as the industry was ramping up its workforce, adding 10,000 mechanics in an effort to recover from the pandemic-induced downturn.
- The majority of these accidents involved falls, vehicle incidents, and injuries from being pinched by objects or equipment, leading to fractures, amputations, and various other injuries. A significant number of these incidents occurred at Maintenance, Repair, and Overhaul (MRO) facilities and airline maintenance shops, with Amentum Services and American Airlines being notably mentioned.
- The increase in accidents underscores the challenges of integrating new workers and the importance of adherence to safety protocols.
- incidents serve as a stark reminder of the potential risks in the aircraft maintenance industry and highlight the critical need for ongoing education on safety practices and the importance of regular reviews of safety protocols to mitigate risks.

Pay Attention - Recent accidents often highlight overlooked risks or the failure to adhere to safety protocols. For example, an accident may occur due to the lack of edge protection on a scaffold, teaching the importance of ensuring all safety measures are in place before beginning work.

- Learning from these incidents is crucial for improving safety standards and practices in the industry.
- Regularly reviewing accident reports and safety bulletins can help organizations stay informed about potential hazards and the latest safety recommendations.

Preventive Measures

- **Training and Education:** Providing comprehensive training to workers on how to safely work from heights, including the use of personal protective equipment (PPE), is fundamental.
 - This includes training on how to properly use harnesses, lanyards, and other fall arrest systems.
- **Use of PPE:** Ensuring that workers are equipped with the correct PPE, such as harnesses for fall arrest systems and helmets to protect against head injuries, is crucial.
 - Regular checks should be conducted to ensure that PPE is in good condition and properly used.
- **Safety Planning:** Developing a safety plan for each project that includes identifying potential hazards, defining the measures to mitigate these risks, and establishing rescue procedures in case of an accident.
- **Regular Maintenance and Inspection:** Conducting regular inspections of the equipment used for working at heights, such as ladders, scaffolds, and personal fall protection equipment, to ensure they are in good condition and safe to use.

Challenges

- **Complacency:** Over time, workers may become complacent about safety measures, especially if they have not experienced or witnessed an accident.
- **Cost:** Small businesses may find the cost of providing the necessary safety equipment and training to be prohibitive.
- **Changing Work Environments:** Construction sites and other environments where working from heights is common are constantly changing, which can introduce new hazards.

Working From Heights Safely – Legislation and Standards

Introduction

Working from heights involves tasks performed in any place where, if precautions are not taken, a person could fall a distance liable to cause personal injury.

In summary, working from heights requires strict adherence to safety legislation and standards to prevent accidents and injuries.

Both employers and employees play crucial roles in ensuring a safe working environment by complying with regulations, using appropriate safety equipment, and staying informed about best practices in safety.

- This includes work above ground/floor level, near or on openings in the floor, or near or on fragile surfaces.
- The risks associated with working from heights make it crucial for both employers and employees to be well-informed about relevant legislation, standards, and best practices for safety.

Legislation and Standards

- Globally, many countries have specific legislation and standards that govern working from heights to ensure the safety and health of workers.
- These laws and standards often detail the minimum requirements for the prevention of falls, the use of personal protective equipment (PPE), and the training required for workers who perform these tasks.
- OSHA (Occupational Safety and Health Administration) in the United States: OSHA provides detailed regulations for fall protection in various industries, including construction and general industry. Key standards include 29 CFR 1926.501 for construction and 29 CFR 1910.28 for general industry.
- EU-OSHA shares good practice and communicates information in a variety of ways to reach employers, workers and workplaces. Their publicity campaigns include the European Week for Safety and Health at Work, which focuses on different themes.

- They also provide information on their website at <http://osha.europa.eu/en>
 - In the European Union, the Directive 2001/45/EC establishes minimum safety and health requirements for the use of equipment for work at heights.
- HSE (Health and Safety Executive) in the United Kingdom: The Work at Height Regulations 2005 (WAHR) outline the comprehensive measures employers must take to ensure safety when working at height.

Employer and Employee Responsibilities

Employers are generally responsible for:

- Conducting a risk assessment to identify potential hazards when working at heights and determining the necessary control measures.
- Ensuring that all work at height is properly planned, supervised, and carried out by competent persons.
- Providing appropriate work equipment for working at heights and maintaining this equipment.
- Offering training to employees on how to work safely at heights.

Employees have the responsibility to:

- Follow the training and instructions provided by the employer.
- Use the provided safety equipment correctly.
- Report any hazardous conditions to the employer.
- Cooperate with the employer in complying with all relevant safety requirements.

Compliance with Safety Standards - Challenges:

- **Keeping up with Regulations:** Safety standards and legislation can evolve, making it challenging for businesses to remain compliant.
- **Training:** Ensuring all employees have current and comprehensive training can be difficult, especially in industries with high turnover rates.
- **Cost:** Implementing and maintaining the necessary safety measures can be costly, particularly for small businesses.

Working From Heights Safely – Personal Protective Equipment (PPE)

Introduction Personal Protective Equipment (PPE)

Harnesses are the cornerstone of fall protection PPE, It is important to select the right harness based on the job's specific needs and the worker's body type.

The correct selection, use, and maintenance of PPE, combined with practical demonstrations and ongoing practice sessions, are key to ensuring the safety of workers operating at heights.

It's important for organizations to prioritize these aspects and overcome any challenges through careful planning and commitment to safety standards.

Types of PPE for Working at Heights

- **Harnesses:** Full-body harnesses distribute fall forces throughout the body, significantly reducing the risk of injury.
 - They should be selected based on the type of work and the specific environment (e.g., electrical work might require non-conductive harnesses).
- **Lanyards:** These are used to connect the harness to a secure anchor point.
 - There are different types of lanyards, such as shock-absorbing lanyards which reduce the forces exerted on the body in the event of a fall, and positioning lanyards which help maintain a worker's position while allowing hands-free operation.
- **Retractable Lifelines:** These devices allow for a range of movement but will lock in the event of a rapid movement, such as a fall, to prevent the user from hitting the ground.
- **Anchor Points:** While not wearable PPE, proper anchor points are crucial for effective fall protection. They must be strong enough to support the weight of the person and equipment.

Correct Use and Maintenance of PPE

- **Inspection:** PPE must be inspected before each use for signs of wear, damage, or degradation.
 - This includes checking for frays in lanyards, cracks in buckles, and any other signs that the equipment may not perform as expected.
- **Fitting:** Proper fitting of harnesses is crucial. They should be snug but comfortable, with no loose straps.
 - Incorrectly fitted PPE can fail to protect the wearer properly in the event of a fall.
- **Maintenance:** Regular maintenance is key to ensuring the longevity and reliability of PPE.
 - Follow manufacturer guidelines for cleaning and storage. PPE should be stored in a dry, clean area away from direct sunlight and extreme temperatures.
- **Replacement:** Any PPE involved in a fall or that fails inspection should be immediately taken out of service and replaced.

Working From Heights Safely – Risk Assessment and Planning

By thoroughly assessing risks, carefully planning work, and implementing robust mitigation strategies, the safety of workers can be significantly enhanced when working at heights. It's about creating a culture of safety that prioritizes the well-being of every individual involved in such tasks.

Risk Assessment and Planning - Conducting Risk Assessments

Working at heights involves inherent risks that can lead to severe injuries or fatalities if not properly managed.

To ensure the safety of workers and the successful completion of tasks, it is essential to adopt best practices focused on risk assessment, planning, and the implementation of effective mitigation strategies.

Consider the Following Elements:

- **Identify Hazards:** Begin by identifying potential hazards associated with working at heights.
 - This includes fall hazards, unstable working platforms, weather conditions, and any other environmental or task-related risks.
- **Analyze Risks:** Evaluate the likelihood and severity of each identified hazard.
 - Consider factors such as the height of work, the condition of equipment, and the skill level of workers.
- **Record Findings:** Document the hazards, their associated risks, and the people who might be affected.
 - This documentation is crucial for planning and implementing control measures.
- **Review and Update:** Risk assessments should be living documents, reviewed and updated regularly, especially when there are changes in work conditions, tasks, or after an incident.

Planning Work at Heights Safely

- **Select Appropriate Equipment:** Choose the right type of equipment for the task, such as scaffolds, ladders, or personal fall arrest systems, ensuring they comply with safety standards.
- **Train Workers:** Ensure that all workers are trained in the safe use of equipment, awareness of hazards, and the actions to take in an emergency.
- **Emergency Plan:** Develop and communicate a clear plan for emergency situations, including rescue procedures for falls from heights.
- **Schedule Regular Inspections:** Equipment and work areas should be inspected regularly to identify and rectify potential hazards.

Mitigation Strategies for Identified Risks

- **Use of Personal Protective Equipment (PPE):** Ensure workers are equipped with the necessary PPE, such as harnesses, helmets, and non-slip footwear.
- **Implement Fall Protection Systems:** Depending on the assessment, use passive or active fall protection measures like guardrails (passive) or fall arrest systems (active).
- **Minimize Work at Heights:** Where possible, design tasks to be completed on the ground or from a solid construction to minimize the need to work at height.

- **Safe Work Practices:** Establish and enforce safe work practices, such as maintaining a tidy workspace to prevent tripping hazards and restricting access to authorized personnel only.
- **Weather Considerations:** Plan for adverse weather conditions, postponing work during high winds, rain, or lightning due to increased risk.

Working From Heights Safely – Emergency Procedures and Rescue Plans

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Emergency Procedures and Rescue Plans - Developing Emergency Procedures

Working from heights introduces a significant risk of falls, which can result in serious injuries or fatalities. Therefore, establishing comprehensive emergency procedures and effective rescue plans is critical to ensure the safety and well-being of all workers involved.

Best Practices for Working from Heights

- **Risk Assessment:** Before any work at height begins, conduct a thorough risk assessment to identify potential hazards and determine the necessary control measures to mitigate them.
- **Training:** Ensure all workers are adequately trained in working from heights safely, including the use of personal protective equipment (PPE), understanding of emergency procedures, and rescue plans.
- **Use of Appropriate PPE:** Workers should be equipped with suitable PPE such as harnesses, lanyards, and helmets, and they should be trained on how to use them correctly.
- **Regular Equipment Inspection:** Regularly inspect all equipment used for working at heights, including ladders, scaffolds, and personal fall arrest systems, to ensure they are in good condition.
- **Emergency Procedures:** Develop and communicate clear emergency procedures that are specific to the site and the types of potential emergencies that could occur.
- **Rescue Plans:** Alongside emergency procedures, develop effective and practicable rescue plans that can be executed swiftly to minimize injuries in the event of a fall.

Concerns in Developing Emergency Procedures and Rescue Plans

- **Timeliness:** In the event of a fall, time is of the essence.
 - Emergency procedures and rescue plans must enable a quick response to prevent further injury or fatalities.

- **Practicality:** Rescue plans must be practical and executable by the team present on site. They should not rely on external rescue services, which may not arrive in time.
- **Training and Drills:** Workers need to be trained in executing rescue plans, and regular drills should be conducted to ensure they can perform them effectively under stress.
- **Site-Specific Challenges:** Every worksite has its unique set of challenges and risks. Emergency procedures and rescue plans must be tailored to address the specific conditions and potential hazards of each site.
- **Equipment Availability:** Adequate rescue equipment must be readily available and accessible at all work sites. This includes rescue kits and communication devices.
- **Medical Preparedness:** Emergency procedures should include first aid and medical treatment steps to be taken immediately after a rescue, and workers should be trained in basic first aid.

Creating Effective Rescue Plans

- **Identification of Rescue Methods:** Determine the most appropriate rescue methods for different scenarios and ensure they are feasible with available resources.
- **Clear Communication:** Establish a clear line of communication among all workers, including who to contact in an emergency and how.
- **Regular Updates and Reviews:** Regularly review and update rescue plans to incorporate lessons learned from drills or actual incidents, and to adapt to any changes in the work environment.
- **Integration with Local Emergency Services:** Coordinate with local emergency services to ensure they are familiar with the site and the types of potential incidents that could occur, enhancing the effectiveness of the response.

Next Steps

For additional information comments or questions please email team@sassofia.com