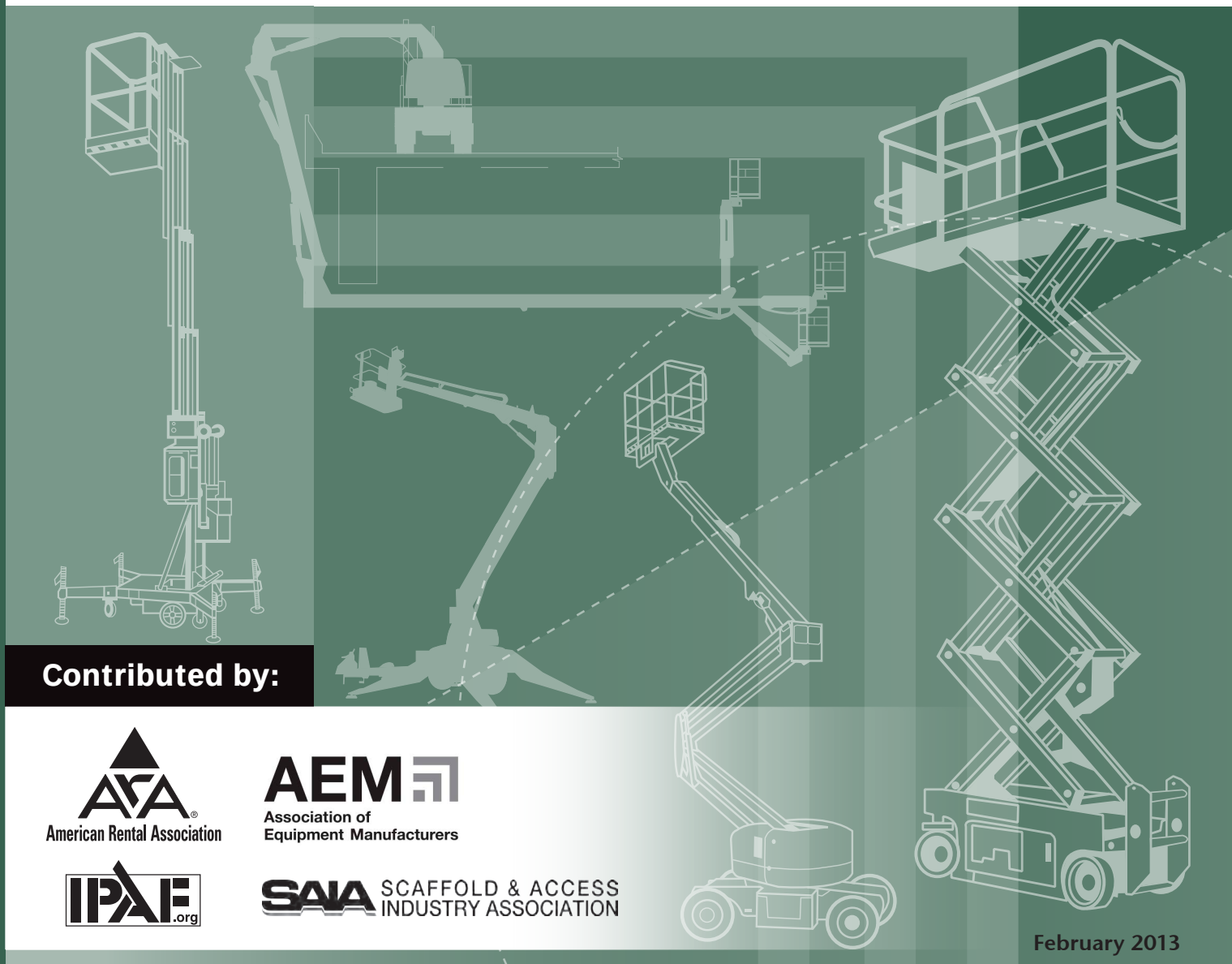
Statement of Best Practices for Workplace Risk Assessment and Aerial Work Platform Equipment Selection



Contributed by:

American Rental Association

AEM Association of Equipment Manufacturers

IPAF.org

SAIA SCAFFOLD & ACCESS INDUSTRY ASSOCIATION

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Industry Commitment

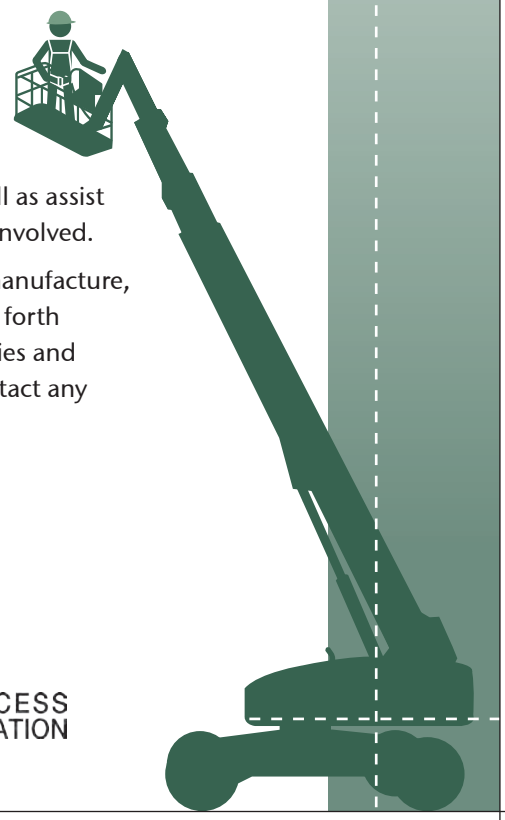
All in the industry – rental businesses, manufacturers, associations for those entities, educators, regulators, users and operators – are dedicated to the best practices related to the training and safe use of aerial work platform (AWP) equipment. The various types, models and options of AWP equipment provide users with many choices to address their requirements for temporary work at height. Operator safety is reliant on many factors, including workplace risk assessment and AWP equipment selection. A priority of all in the industry is to make sure that everyone who owns and operates AWP equipment has a clear understanding of his or her role in the requirements for the safe use of that equipment.

Associations representing the AWP equipment industry previously joined forces to produce two best practices documents:

- The *Statement of Best Practices of General Training and Familiarization for Aerial Work Platform Equipment* identifies the roles and responsibilities of all parties for general training and familiarization and provides best practices and guidelines for their implementation.
- The *Statement of Best Practices of Personal Fall Protection Systems for Aerial Work Platform Equipment* was developed as a general guide for those who want to understand basic fall protection and the best practices for the use of personal fall protection (PFP) systems with AWP equipment. It also is intended to assist users and operators with an overview of applicable regulations and standards, providing information on personal fall protection equipment (PFPE) selection and use, and incorporation of recognized industry best practices.

The industry has joined forces again to create the *Statement of Best Practices for Workplace Risk Assessment and Aerial Work Platform Equipment Selection*, which can aid in the identification of workplace hazards, offer guidance for conducting a thorough workplace risk assessment and implementing control measures, as well as assist in the selection of the most appropriate AWP equipment for the work involved.

These documents are designed to provide information to those who manufacture, sell, rent or use AWP equipment. The industry is committed to putting forth initiatives that increase awareness of best practices, clarify responsibilities and address the safe use of AWP equipment. For answers to questions, contact any of the associations that have contributed to this document.



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This *Statement of Best Practices for Workplace Risk Assessment and Aerial Work Platform ("AWP") Equipment Selection* (this "Statement") developed by the American Rental Association, the Association of Equipment Manufacturers, the Scaffold & Access Industry Association, and the International Powered Access Federation (collectively, the "Associations") is intended to provide general guidance in assessing risks, implementing control measures and selecting the most appropriate AWP for the work involved and to summarize certain standards and regulations published by the American National Standards Institute and the Occupational Safety and Health Administration. The Associations do not purport to include in this Statement all standards and regulations applicable to the use of AWP equipment and any reference in this Statement to such standards and regulations should be read in conjunction with the standards and regulations in their entirety. Each individual or company should use its own independent judgment and discretion in successfully implementing the materials in this Statement to best fit the unique needs of its business and its use of AWP equipment.

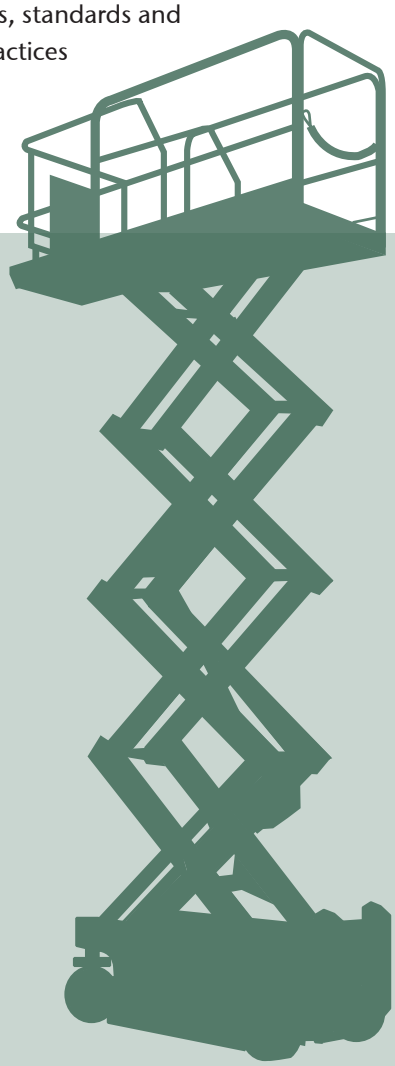
Each of the Associations expressly disclaims any warranties or guarantees, express or implied, and none of the Associations shall be liable for damages of any kind in connection with the material, information, or procedures set forth in this Statement or for reliance on the contents of this Statement. In issuing this Statement, none of the Associations is engaged in rendering legal or other professional services. This Statement is not a substitute for applicable laws, standards and regulations and does not alter or limit the obligation of member companies to fully comply with federal, state and local law and prudent safety measures relating to the use of aerial work platform equipment. This Statement is not intended to create new legal liabilities or expand existing rights or obligations.

Section I: Introduction

The primary purpose of AWP equipment is to provide personnel temporary access to work at height — work that may involve risk from potential workplace hazards. To increase the safe use of this equipment and reduce the risk associated with working at height, members of the industry recognized the need for a best practices document that offers information and guidance in identifying recognized common workplace hazards associated with AWP equipment use, developing and implementing appropriate control measures to limit the risk and then using the most appropriate piece of AWP equipment for the work intended.

While manufacturers' operator's manuals and applicable sections of the American National Standards Institute/Scaffold & Access Industry Association (ANSI/SAIA) A92 Standards and Occupational Safety and Health Administration (OSHA) regulations must be followed for their requirements and recommendations, there is a need for AWP equipment stakeholders (dealers/rental companies, owners, users, and operators) to identify risks from potential workplace hazards and address them prior to the selection and operation of the most appropriate AWP equipment for the workplace environment and application.

This guide is intended to be a supplement to these regulations, standards and manufacturers' recommendations and offers industry best practices regarding the implementation of workplace risk assessments and control measures as well as the process of selecting the most appropriate AWP equipment for the job at hand.



Objectives

- Educate the industry on applicable OSHA regulations and the industry-recognized and supported ANSI/SAIA A92 Standards.
- Provide information to assist users and operators in assessing the risk of potential hazards for the work to be done and implementing appropriate control measures to reduce or eliminate such risks.
- Offer guidance and issues to consider in the selection of the most appropriate AWP equipment to perform the work needed.
- Encourage the incorporation of best practices into a company's workplace risk assessment plan.

Section II: Definitions

The following terms and definitions provide a common understanding when each is referenced throughout this document. Refer to these when reading each section.

Aerial (Work) Platform or Mobile Elevating Work Platform (MEWP):	Any vehicle-mounted, self-propelled or manually-propelled device which consists of, at a minimum, a work platform with controls, an extending structure and a chassis, supported from ground level by a structure, used for the purpose of positioning personnel, their tools, and necessary materials to elevated work locations.
Competent Person:	One who is capable of identifying existing and predictable hazards in the surroundings or working conditions which are unsanitary, hazardous, or dangerous to employees, and who has authorization to take prompt corrective measures to eliminate them.
Control Measure:	Action taken to eliminate or reduce an identified hazard to an acceptable level of risk.
Dealer/Rental Company:	A person or entity who buys from a manufacturer or distributor and who generally sells, rents, and services aerial platforms.
Employer:	Any corporation, partnership, proprietorship, government agency, or other organization that has employees.
Familiarization:	Providing information regarding the control functions and safety devices for the aerial platform(s) to a qualified person or operator who controls the movement of an aerial platform.
General Training:	Instruction to enable the trainee to become a qualified person regarding the task to be performed, including knowledge regarding potential hazards.
Hazard:	A potential for harm.
Manufacturer:	A person or entity who makes, builds or produces equipment.
Operator:	A qualified person who controls the movement of an aerial platform.
Owner:	A person or entity who has possession of a aerial platform by virtue of proof of purchase.

Personal Fall Protection Equipment (PFPE):	Any equipment or device that protects a person from experiencing an accidental fall from elevation or that mitigates the effect of such a fall.
Platform Height:	The vertical distance from the surface upon which the AWP equipment is being supported to the floor of the platform.
Qualified Person:	One who, by possession of a recognized degree, certificate, or professional standing, or by extensive knowledge, training, and experience, has successfully demonstrated his/her ability to solve or resolve problems related to the subject matter, the work, or the project.
Reasonable Diligence:	A measure of prudence, responsibility and diligence that is expected from, and ordinarily exercised by, a responsible and prudent person under the circumstances.
Risk:	The degree of probability that someone could be harmed by a hazard.
Risk Assessment:	A plan developed by a competent person to identify the steps of the work, the hazards associated with each step, and controls to mitigate or eliminate the hazards identified.
User (of AWP Equipment):	Person(s) or entity(ies) that has care, control, and custody of the aerial platform. This person or entity may be the employer of the operator, a dealer, employer, owner, lessor, lessee, or operator.
Working Height:	The reach of a worker (generally 6 feet) added to the platform height.

Section III: Situation Analysis

The identification of potential workplace hazards must occur prior to the start of any work. Doing so provides the opportunity to eliminate or control the risks associated with the identified hazards. It also allows management to correct any uncontrolled hazards and avoid the risk of harm to workers and property damage.

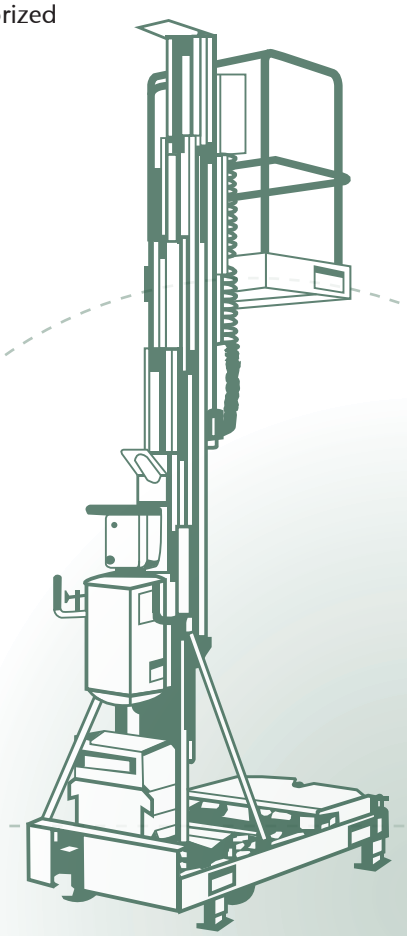
AWP equipment is designed to safely lift personnel, along with their tools and materials, to positions where they can carry out work from the platform. AWP equipment provides one of the safest means to place workers at height to perform a task. Nonetheless, working at height has inherent risks that must be properly addressed to ensure the safety of workers.

OSHA has identified falls from height as a leading hazard for workers in the United States. In its fall prevention campaign, OSHA states: "Falls are the leading cause of death in construction. In 2010, there were 264 fall fatalities (255 falls to a lower level) out of 774 total fatalities in construction. These deaths are preventable."

AWP equipment's safe use is dependent on several requirements, some of which are listed below:

- Assessment of risk for the work to be done
- Selection of the most appropriate equipment to perform the work
- Delivery of operator training and familiarization to personnel authorized to perform the work
- Performing all required inspections
- Maintenance and repairs of equipment
- Monitoring of safe use practices

To help reduce falls from height and other potential hazards, a workplace risk assessment should be undertaken. This is a a process that identifies potential hazards associated with the work to be performed, assesses the level of risk involved and defines the methods to control the potential hazards and reduce the risk. Part of this equation also involves using the most appropriate AWP equipment for the work to be completed.



Section IV: Current AWP Equipment Associations, Governing Bodies and Standards

Associations

The associations involved in this effort include:

- **American Rental Association (ARA)** is the international trade association for the equipment rental industry, including rental businesses and suppliers to the industry. ARA provides educational, insurance/risk management, business management and marketing resources; networking opportunities; industry research; and legislative and regulatory advocacy for its members.
- **Association of Equipment Manufacturers (AEM)** is the North American-based international trade group representing the off-road equipment manufacturing industry. AEM's members manufacture equipment, products and services used worldwide in the agriculture, construction, forestry, mining and utility sectors.
- **International Powered Access Federation (IPAF)** is a not-for-profit trade association owned by its members who include manufacturers, rental companies, contractors and users. IPAF promotes the safe and effective use of aerial work platforms worldwide through providing technical advice and information, through influencing and interpreting legislation and standards, through its safety initiatives and training programs.
- **Scaffold & Access Industry Association (SAIA)** is a nonprofit trade association committed to raising the standards of professionalism within the scaffold and access industry. The SAIA represents all facets of the scaffold and access industry. Through its various programs, the SAIA promotes safety, training and a highly professional, responsible image of the scaffold and access professional. The SAIA is also the secretariat for the American National Standards Institute, Accredited Standards Committee (ASC) A92 Standards.

Governing Bodies

The governing body that provides guidelines and regulations includes:

- **Occupational Safety and Health Administration (OSHA)** is an agency of the U.S. Department of Labor and the main federal agency charged with the development and enforcement of safety and health legislation. Under the Occupational Safety and Health (OSH) Act of 1970, OSHA's role is to assure safe and healthful conditions for working men and women by authorizing enforcement of the standards developed under the Act, by assisting and encouraging the states in their efforts to assure safe and healthful working conditions, by providing for research, information, education and training in the field of occupational safety and health.

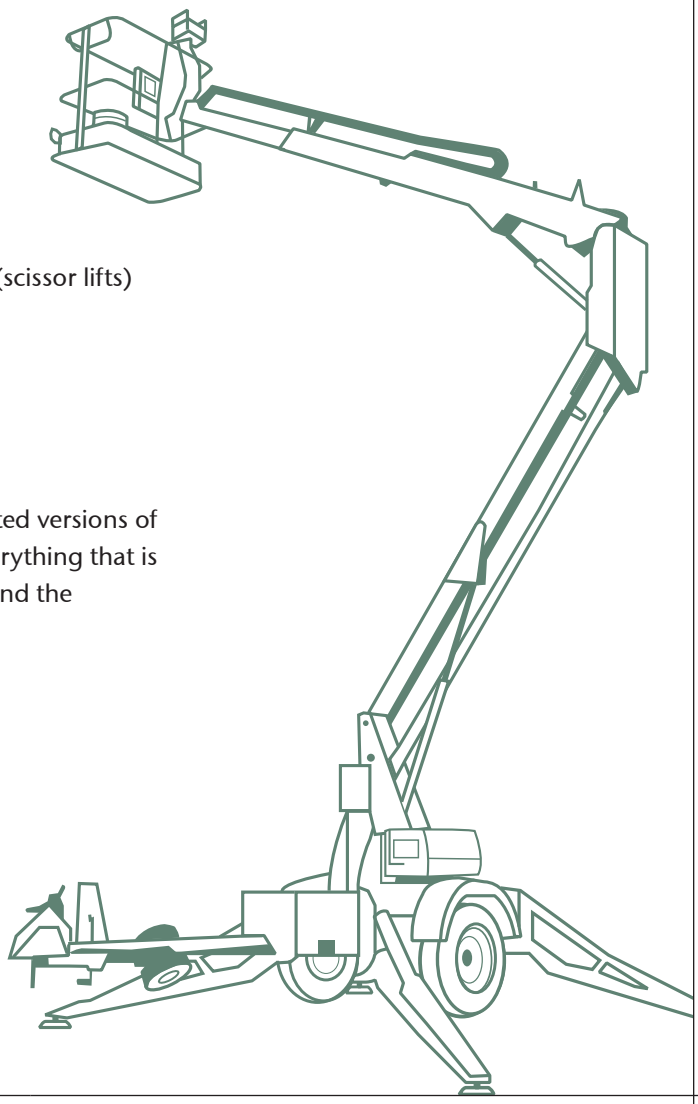
Standards

American National Standards Institute (ANSI) is the voice of the U.S. standards and conformity assessment system. The Institute oversees the creation, dissemination and the use of thousands of norms and guidelines that directly impact businesses in nearly every business sector.

Various organizations serve as secretariats for standard development. These secretariats form committees that develop and maintain the standard(s), ensure that the process of revision is timely and in accordance with ANSI procedures, and publish the final products of the consensus process. The goal is to make each committee a balance of interested classes, which could include consumers/users, distributors/dealers, experts, regulatory agencies, manufacturers, testing laboratories, not-for-profit or for-profit entities, etc.

The Scaffold & Access Industry Association (SAIA) serves as the secretariat for the ASC A92 Main Committee. ASC A92 Standards are applicable to U.S. operations. They are used by manufacturers, dealers, owners, users and operators of AWP equipment. The purpose of the standards is the proper and safe use of machines and the prevention of accidents and injuries. These standards also establish criteria for the manufacturers as well as aid the manufacturers, dealers, owners, users and operators of AWP equipment to understand their various responsibilities. This document references the following A92 Standards:

- A92.2 Vehicle-mounted Elevating and Rotating Aerial Devices (trailer-mounted boom lifts)
- A92.3 Manually Propelled Elevating Aerial Platforms (push-around)
- A92.5 Boom-supported Elevating Work Platforms (boom lifts)
- A92.6 Self-propelled Elevating Work Platforms (scissor lifts)
- A92.8 Vehicle-mounted Bridge Inspection and Maintenance Devices



The A92 Standards are published in two forms:

- Full ANSI/SAIA A92 Standards
- ANSI/SAIA Manuals of Responsibilities are abbreviated versions of the full ANSI/SAIA A92 Standards. They contain everything that is in the full standards except design-related criteria and the manufacturers' responsibilities.

Section V: ANSI and OSHA Roles and Compliance Requirements

Roles of ANSI and OSHA

ANSI promotes safety in the industry by developing recommendations in the form of standards and guidelines. While ANSI standards are considered recommended guidelines, they are not laws or regulations. Complying with ANSI standards is **voluntary**.

OSHA is an agency of the U.S. government that issues and enforces regulations for employers to ensure workplace safety and health. Though the regulations are often referred to as standards, they are in fact federal laws and therefore compliance is **mandatory**.

Reasons for Complying

ANSI standards and OSHA regulations are often confused because they generally address the same issues. In fact, many OSHA regulations were written based on ANSI standards. Also, OSHA often adopts ANSI standards via "incorporation by reference." When standards are adopted or incorporated, they become part of the OSHA regulation and are no longer voluntary.

Although ANSI standards are technically voluntary, it is in **every company's best interest** to comply with them. Even when they are not incorporated into OSHA regulations, employers are expected to acknowledge them since they represent a consensus on what experts consider safe. Also, not following standards may be considered a violation of OSHA's "general duty" clause, which requires employers to keep the workplace "free from recognized hazards." Finally, since ANSI standards are considered best practices, they are viewed as the legal "standard of care." **Noncompliance can equate to negligence and legal liability in the event of an injury.**

OSHA refers to ANSI standards for industry best practices.

OSHA has written many rules in the Code of Federal Regulations (CFR), but in some cases has adopted consensus standards to be used as minimum guidelines by their reference in the CFR. In 1974, they adopted many of the ANSI and National Fire Protection Association (NFPA) standards in order to promote safety rules. In this particular time frame, there was only one aerial lift standard, A92.2-1969 for vehicle-mounted elevating and rotating work platforms.

ANSI has since created other standards for other types of aerial lifts and OSHA recognizes these consensus standards. OSHA also has referenced these consensus standards through interpretive letters regarding compliance.

All contributing organizations fully support the ANSI/SAIA A92 Standards as the recognized standards for AWP equipment. The associations and their members are actively involved on the ASC A92 Main and Subcommittees.

Section VI: Hazards, Risks and Workplace Risk Assessments

Before undertaking a workplace risk assessment and implementing any control measures, it is important to understand the differences between a hazard and a risk, as well as what is meant by the term workplace risk assessment.

Hazard vs. Risk

As mentioned in Section II: Defintions, a:

- **Hazard** is the potential for harm.
- **Risk** is the degree of probability that someone could be harmed by a hazard.

Therefore, to put oneself "at risk" means to participate in an activity or event that could lead to death, injury, damage or loss. Examples of risks include operating AWP equipment near energized conductors (such as power lines, indoor crane busbars, etc.) or driving AWP equipment near other moving vehicles.

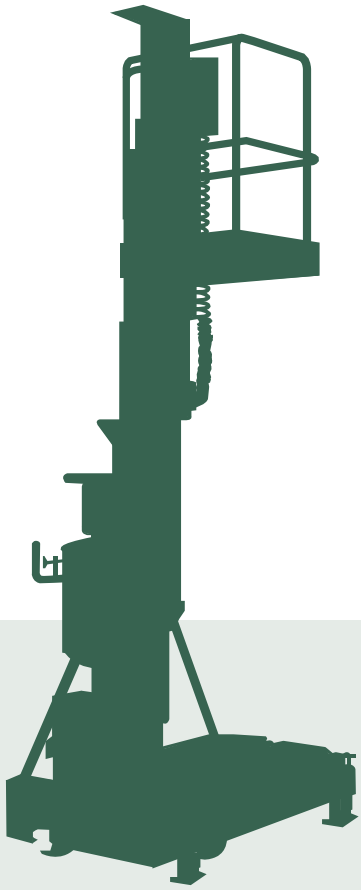
A person may reduce risks associated with a hazard, but cannot eliminate the underlying hazard itself. For example, gasoline is hazardous, but it does not have a significant risk provided that proper use and storage precautions have been taken.

Workplace Risk Assessment

A **workplace risk assessment** focuses on job tasks as a way to identify hazards. It examines the relationship between the worker, the task, the tools and the work environment. After identifying uncontrolled hazards, it is important to take steps to eliminate or reduce the risk to an acceptable level.

On larger construction projects, a workplace risk assessment may be called a job hazard analysis (JHA). Identifying hazards and assessing risks, regardless of the scope or size of your project, must be completed before work begins.

This document presents one way to perform a workplace risk assessment. Users/employers are encouraged to research the various workplace risk assessment methods and choose one that is best suited for their workplace needs.



Responsibility to Perform a Workplace Risk Assessment

Both ANSI and OSHA state that the **user/employer** has the responsibility to provide its workers with a work environment that is "free from recognized hazards." The applicable ANSI standard for the selected AWP equipment also requires workplace inspections to be performed to identify hazards before and during use of AWP equipment.

For instance:

ANSI/SAIA A92 Standards, Section 7 Responsibilities of a User

- Specific to hazards, section 7.10 states: *"... warn personnel of potential hazards, provide the means to protect against identified hazards and explain the potential consequences of not following proper operating guidelines."*

OSHA Regulations: User/Employer Must Ensure a Safe Workplace

- **OSHA General Duty Clause, Section 5(a)(1)** of the OSH Act states that:
  (a) "Each employer –
  *(1) shall furnish to each of his employees employment and a place of employment which are free from **recognized hazards** that are causing or are likely to cause death or serious physical harm to his employees. ..."*

Additional OSHA regulations that pertain to ensuring a safe workplace include:

- **OSHA 1910 Subpart I App B** Non-mandatory Compliance Guidelines for Hazard Assessment and Personal Protective Equipment Selection:
  (1) "Controlling hazards. PPE devices alone should not be relied on to provide protection against hazards, but should be used in conjunction with guards, engineering controls, and sound manufacturing practices."

- **OSHA 1926.20(b)** Accident prevention responsibilities:
  (1) "It shall be the responsibility of the employer to initiate and maintain such programs as may be necessary to comply with this part.

  (2) Such programs shall provide for frequent and regular inspection of the job sites, materials and equipment to be made by competent persons designated by the employer."

- **OSHA 1926.21(2)** Safety training and education:
  "The employer shall instruct each employee in the recognition and avoidance of unsafe conditions and the regulations applicable to his work environment to control or eliminate hazards or other exposure to illness or injury."

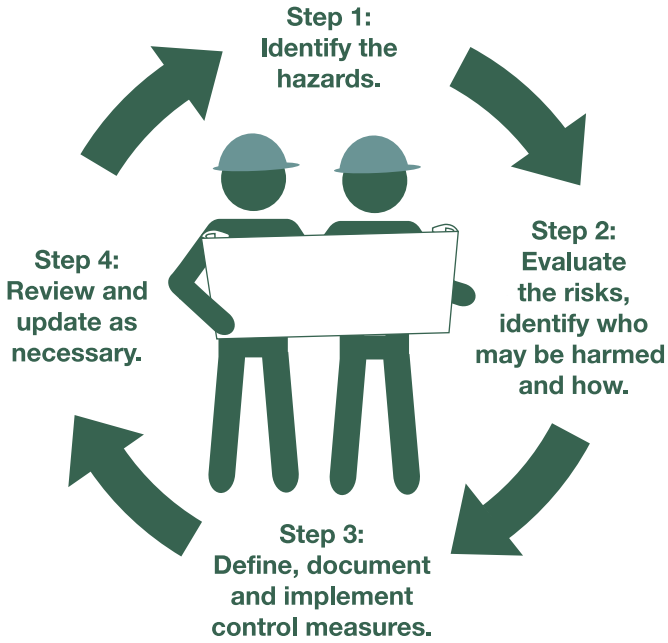
An OSHA citation is based on the following:

1) A **hazard** exists.

2) Employees are exposed to the **hazard**.

3) The employer knew, or should have known with the exercise of **reasonable diligence**, about conditions that exposed the employees to the **hazard** (referred to as employer knowledge).

Assessing Risk in the Workplace



To assess risk in the workplace and with equipment, users should follow these four steps:

Step 1: Identify the hazards.

Step 2: Evaluate the risks, identify who may be harmed and how they may be harmed.

Step 3: Define, document and implement control measures.

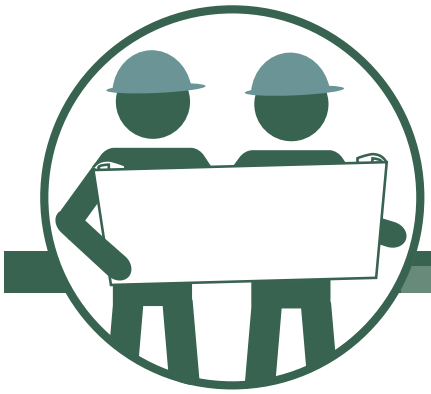
Step 4: Review and update as necessary.

The qualified person should be capable of identifying existing and foreseeable hazards in the surroundings or working conditions, and should be capable of developing and implementing suitable and sufficient means to abate the identified hazards.

Involve your employees in the process. They may have useful information about how the work is done and have suggestions for effective control measures. This will make the workplace risk assessment process more thorough and effective. Remember, the user/employer is responsible for assuring that the assessment is carried out properly.

It is recommended that a user/employer be able to demonstrate through written documentation:

- That a proper workplace risk assessment was made.
- The workplace risk assessment evaluated who might be affected by the potential hazard.
- The workplace risk assessment evaluated the potential hazards based on the severity of harm and the probability of occurrence.
- The control measures were reasonable and the remaining risk (if any) was reduced to an acceptable level.
- Employees were involved in the process.



Step 1: Identify the hazards.

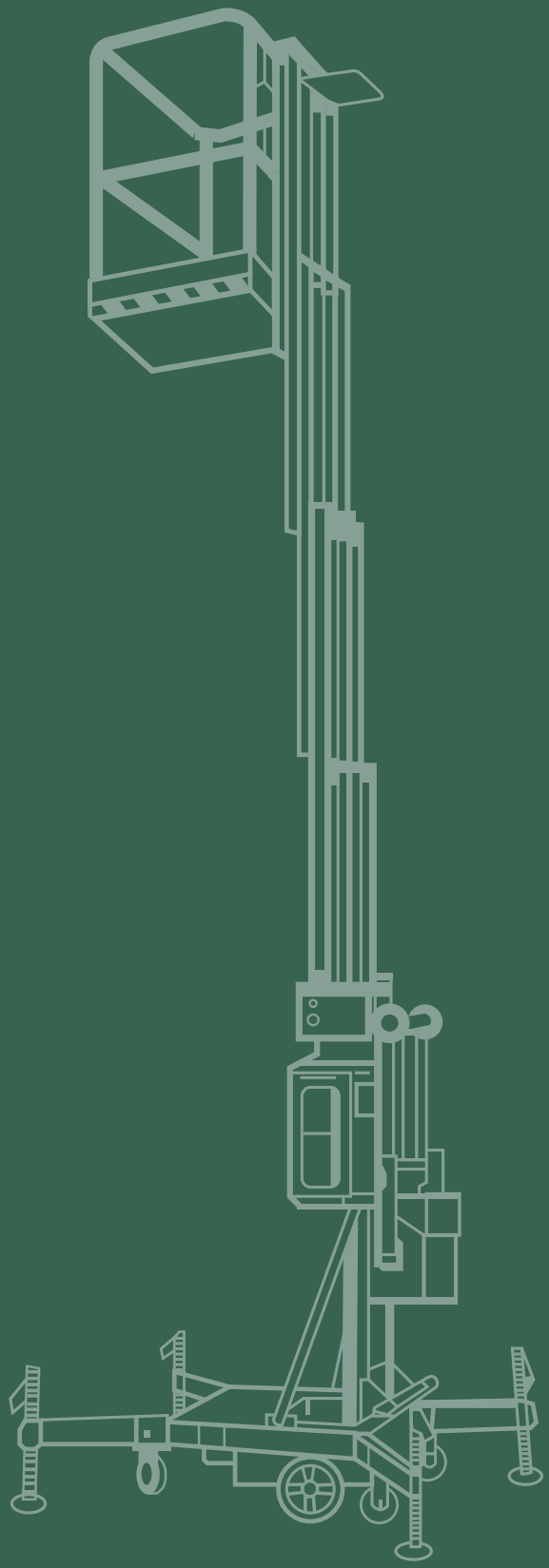
When working in a place every day, it is easy to overlook some hazards, so following are some tips to help you identify potential hazards:

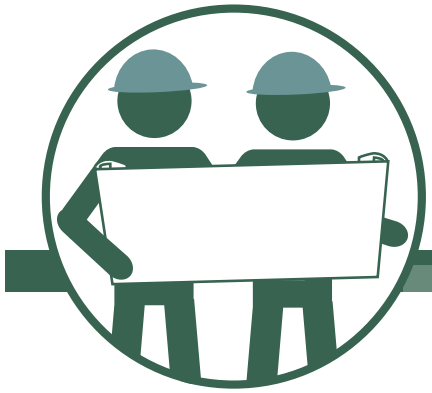
- Refer to the relevant ANSI/SAIA standard for the selected AWP equipment for a list of hazards, issues and subjects to be considered. The AWP equipment operator's manual will contain warnings and hazards to avoid in addition to instructions on the safe use of the AWP equipment.
- Walk around the workplace and look at what reasonably could be expected to cause harm.
- Ask employees or their supervisors what they think. They may have noticed things that are not immediately obvious to you. Consider having someone not associated with the workplace help identify hazards. A fresh set of eyes can sometimes spot something you've overlooked.
- Visit the OSHA website (osha.gov). OSHA publishes practical guidance on where hazards occur and how to control them.
- Investigate resources available through trade associations.
- Check manufacturers' instructions or material safety data sheets (MSDS) for chemicals and equipment; they can be very helpful in identifying hazards.
- Review past accident records to identify control measures that should already be in place.
- Remember to think about long-term hazards to health (e.g., high levels of noise or exposure to harmful substances) as well as safety hazards.

While not an all-inclusive list, the following are some of the hazards that can be associated with work involving AWP equipment:

- An untrained and/or non-familiarized operator
- Overhead obstructions during use
- Energized conductors, power lines or electrical hazards
- Other moving equipment or vehicles in the work area
- Obstructions during travel of the AWP equipment
- Overloading the platform
- Other personnel working in the same area
- Unusual operating conditions, e.g., on trucks, scaffolding, floating vessels, etc.
- Unauthorized use
- Faulty or defective controls
- Inadequate ground support
- Ramps, decks and curbs
- Debris, such as tree branches, workplace materials, cords, etc.
- Drop-offs or holes, including those concealed by water, ice, mud, etc.
- Slopes
- Bumps and floor (ground) obstructions
- Wear, problems or malfunctions with the AWP equipment
- Wind and weather conditions
- Improper AWP equipment selection
- Hazardous environment, inadequate ventilation and/or excessive noise
- Inadequate lighting

Since each work area has its own requirements and environmental conditions, additional hazards may be added to the list. Take photographs of the workplace, if appropriate, for use in making a more detailed analysis of the work.





Step 2: Evaluate the risks, identify who may be harmed and how.

Each hazard has at least one corresponding risk associated with it. There needs to be a clear understanding of who may be harmed and how they may be harmed. Clarifying these aspects will help identify the best way of managing each risk. That doesn't mean listing everyone by name but rather identifying groups of people (e.g., AWP equipment operator, AWP equipment occupant or personnel on the ground).

Additional consideration in your workplace risk assessment should include:

- New hires (apprentices), adolescent workers, non-English-speaking workers and people with disabilities (e.g., limited hearing or eyesight), etc., who may face an increased risk compared with other workers for certain hazards.
- Visitors, contractors, maintenance workers, etc., who may not be in the workplace all the time.
- Members of the public, if they could be exposed to the activities.
- Others who share a common work area. Think about how the work affects others as well as how their work affects your personnel.

In each case, identify how each group might be harmed. For example, placing the platform with workers between overhead steel trusses may place the operator and occupants at risk to be crushed. It also may place personnel at risk of being hit by falling tools and material if they are under or around the elevated AWP equipment.

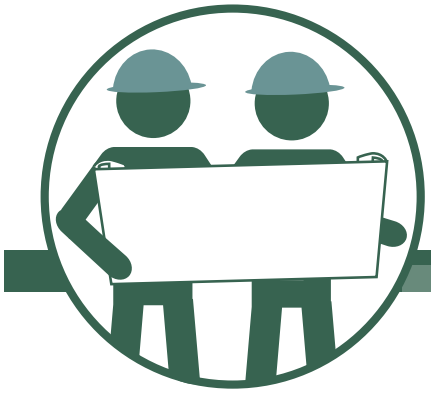
Data from the U.S. Bureau of Labor Statistics show the leading causes of death involving the use of AWP equipment in construction to be:

- Electrocution
- Fall
- Tip-over
- Crushed (caught in between)
- Collision (struck by/against)

In addition, the following are contributing factors to accidents, injury and/or death:

- Unauthorized modification
- Damaged equipment
- Environmental atmosphere

Known hazards should be considered when performing your workplace risk assessment.



Step 3: Define, document and implement control measures.

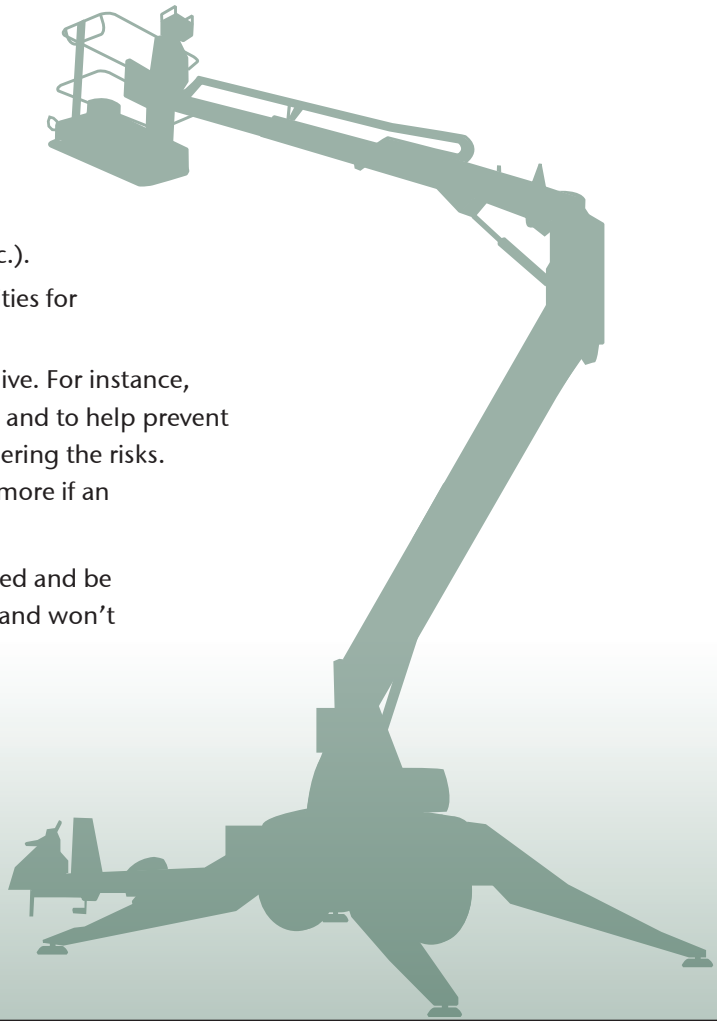
A. Define and Document the Control Measure

Look at what is already being done. Think about what controls are in place and how the work is being organized. Then compare this with industry safe practices and see whether there is more that should be done. Consider:

- Can I eliminate the risk altogether?
- If not, how can I control the risk so that harm is unlikely to be caused?

When controlling risks, consider the examples below and the table on the following page:

- Use the lowest risk option (e.g., select the most appropriate piece of AWP equipment for the required task).
- Prevent access to the hazard (e.g., by guarding or using barriers between the AWP equipment and people/traffic, etc.).
- Organize work to reduce exposure to the hazard (e.g., group tasks and time to reduce exposure or conflicts).
- Issue personal protective equipment (PPE) (e.g., hard hats, footwear, goggles, PFPE, etc.).
- Provide first-aid facilities (e.g., washing facilities for removal of contamination).



Improving health and safety need not be expensive. For instance, placing a mirror on a corner to improve visibility and to help prevent vehicle accidents is a low-cost precaution considering the risks. Failure to take simple precautions can cost a lot more if an accident does happen.

Involve employees to achieve buy-in of all involved and be sure that what is proposed will work in practice and won't introduce any new hazards.

		Control Measure	Example
Prevention	Eliminate risk	Discontinue process or use of equipment/substance.	Lower lights to ground vs. working at height to change lights.
	Reduce risk	Substitute process, equipment or substance with safer alternative.	Use AWP equipment vs. ladder or scaffold to eliminate risks from assembly and climbing.
	Isolate risk	Install barriers and guards.	Prevent access to area by pedestrians and moving vehicles.
	Redesign environment	Add ventilation systems and/or change workstation.	Shut off and lock out power to extract potentially explosive gases produced during the charging of batteries.
Control	Redesign job/ Task training	Implement safe systems for work such as using permits to work, etc.	Have crane's and the AWP equipment's work scheduled at different times to avoid potential collisions.
	Exposure	Minimize number exposed/control exposure levels.	Qualified personnel shall approve access to hazardous atmosphere work area.
	PPE	Issue PPE.	Wear hard hat, safety glasses, steel-toed shoes, PFPE, etc., as appropriate.
	Discipline	Inform people of the risk, attach warning signs and enforce policies.	Provide ongoing monitoring to ensure compliance and administer uniform discipline for non-compliance.

The example that follows shows how a workplace risk assessment can be used to identify existing or potential hazards, evaluate the risk associated with the hazards and assign a specific control measure to mitigate the risks.

Note: This sample is for reference only and must not be considered a complete workplace risk assessment.

Project/Location: Use scissor lift to change lights in the warehouse
Risk Assessor (RA): John Doe
Date: 03/10/20XX

Hazard	Risk	Control Measure
Personnel traffic in the work area	(a) AWP equipment can drive into personnel, causing injuries. (b) Operator/occupant(s) on AWP equipment can drop material or tools on personnel below.	(a) Barricade work area to prevent access. (b) Require all workers to wear a hard hat in the work area. (c) Assign a ground person to warn approaching personnel to take another route if work area cannot be barricaded.
Forklift traffic in the work area	Forklifts can run into AWP equipment and tip it over.	Barricade work area or assign spotter on ground to control traffic flow.
Overhead crane is operating in area where lifts are located	Crane movement could contact AWP equipment and tip it over.	(a) De-energize crane to ensure no operation while AWP equipment is in use. (b) Contact all crane operators and inform them that an AWP equipment is in use in the work area. Schedule crane work to be delayed until lights are changed.
Debris and material on the warehouse floor	(a) Items may prevent AWP equipment from accessing work area and cause worker to overreach to access lights. (b) Driving over debris can result in the AWP equipment exceeding manufacturer's maximum slope and result in the lift becoming unstable and potentially tipping over.	(a) Move debris or material on the floor to allow full access to work area by the AWP equipment. (b) Remove all debris from the work area.

SAMPLE

Additional examples of AWP equipment workplace risk assessments are located in Section VIII: Sample Workplace Risk Assessment Considerations with a sample worksheet in Section IX: Sample Workplace Risk Assessment Template that may be copied for your use.

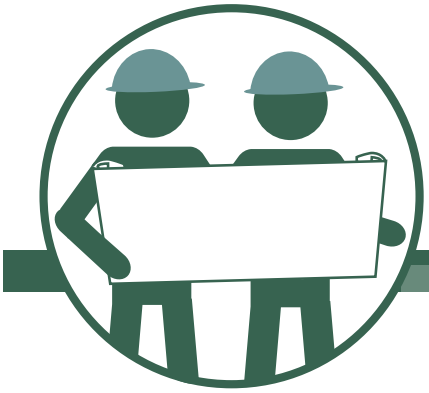
B. Implement the Plan

The value of the workplace risk assessment and control measure is seen only when it is implemented. Sharing the control measures with employees, who will be working or be involved with the AWP equipment, is essential.

Present the plan to all who are involved with the work. Explain the plan and keep it simple. For example, if tripping over tools and materials in the platform is the recognized hazard, workers should be instructed to keep a clean work surface prior to each operation and be provided with a toolbox to keep tools in place. The control measure would be to keep the area clean.

A good plan often includes a mixture of different elements such as:

- Improvements that can be done quickly, perhaps as a temporary solution until more reliable controls are in place.
- Long-term solutions to those risks most likely to cause accidents or injuries.
- Long-term solutions to those risks that could have the most serious consequences.
- Arrangements for training employees on the risks that remain and how they are to be controlled.
- Establishment of clear responsibilities as to who will take what actions and when they will be taken.
- Supervision and monitoring to make sure the control measures stay in place.

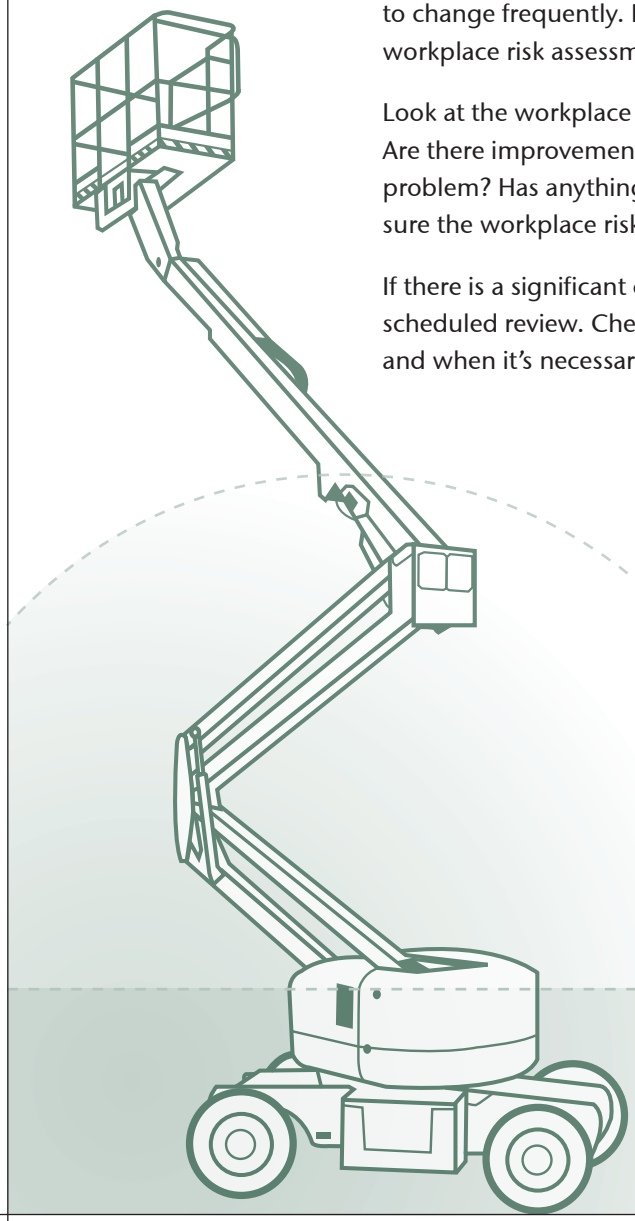


Step 4: Review and update as necessary.

Few workplaces stay the same for the duration of the project. Workplace conditions may change due to a variety of influences, including weather or other external factors. Sooner or later, new equipment will be brought in, resulting in potentially new hazards. To ensure that changes are addressed, review what you are doing on an ongoing basis. Workplace inspections are to be completed before and during AWP equipment use as conditions are likely to change frequently. It is recommended that, at a minimum, a yearly formal workplace risk assessment review takes place.

Look at the workplace risk assessment again. Have there been any changes? Are there improvements that still need to be made? Have workers spotted a problem? Has anything been learned from accidents or near-misses? Make sure the workplace risk assessment stays up to date.

If there is a significant change or an accident, don't wait for the next scheduled review. Check the workplace risk assessment and amend it where and when it's necessary.



Frequently Asked Questions

Why is a workplace risk assessment important?

Injury and even death can occur at the workplace. You can help prevent these from occurring by proper planning. Examine your workplace operations, establishing proper job procedures and ensuring that all employees are trained properly. **One of the best ways to determine and establish proper work procedures is to conduct a workplace risk assessment.**

What is the value of a workplace risk assessment?

Employers and supervisors can use the findings of a workplace risk assessment to identify existing or potential hazards, evaluate the risk associated with the hazards and assign a specific control measure to mitigate the risks. This is likely to result in fewer worker injuries; safer, more effective work methods; and increased worker productivity. The workplace risk assessment also can be a valuable tool for training new employees in the steps required to perform their jobs safely. **For the workplace risk assessment to be effective, management must demonstrate its commitment to safety and health, and follow through to correct any identified uncontrolled hazards.** Otherwise, management may lose credibility and employees may hesitate to go to management when dangerous conditions threaten them.

What if the work I do tends to vary a lot, or I (or my employees) move from one workplace to another?

Identify the hazards you can reasonably expect and assess their potential risks. Your current workplace risk assessment can apply to the majority of your work. Where your work or workplace conditions are different, conduct additional workplace risk assessments to cover any new or different hazards.

What if I share a workplace?

Tell the other employers and self-employed people at the workplace about any risks your work could cause them and what precautions you are taking. Also, assess the risks to your employees posed by those who share the workplace.

Do my employees have responsibilities?

Yes. OSH Act of 1970 Section 5(b) states that, *"Each employee shall comply with occupational safety and health standards and all rules, regulations, and orders issued pursuant to this Act, which are applicable to his own actions and conduct."*

What if I already have assessed some of the risks?

If you have identified a hazard, assessed its risk to health and safety, and have identified the precautions that need to be taken, you can move on to the next potential hazard.

Section VII: Selecting the Most Appropriate AWP Equipment for the Work to be Performed

Workplace Analysis

When selecting the most appropriate AWP equipment, a workplace analysis must be conducted to determine how the work is going to be safely accomplished. The workplace analysis should address the following:

Required Elevation

Questions to ask regarding elevation include:

- How high does the worker need to reach?
- What is the task that needs to be performed?
- How close does the worker need to be to the work being performed?

The height required will help in selecting the specific size range of AWP equipment. Be aware that the height of AWP equipment can be expressed in two common ways — platform height and working height.

- **Platform height** is the vertical distance from the surface upon which the AWP equipment is being supported to the floor of the platform.
- **Working height** is the reach of a worker (generally 6 feet) added to the platform height.

Required Horizontal Outreach

Questions to ask regarding horizontal outreach include:

- How close can the worker get to the work that needs to be performed?
- What is the height of the object that needs to be reached over to access the work?
- What horizontal outreach and height is required to safely perform the work?
- Are there any obstacles on the ground that will determine where to position the AWP equipment?

Note: The manufacturer's specification sheets define the platform's horizontal reach from the center of rotation of the machine, not the side of the machine. Also note that some add two feet for personnel reach, others do not.

After the height and outreach required for the work are determined, the most appropriate **type** of AWP equipment can be defined. For instance:

- If the worker is directly beneath or beside the task to be performed, a scissor lift or vertical lift may be most appropriate. Scissor lifts with an extension deck also may be an option if there are limited reach requirements.
- If the worker must reach out to perform the work, a boom lift is probably more suitable.
- In some cases where a "straight shot" reach cannot be achieved, an articulated boom lift may be most appropriate, providing "up-and-over" reach. This is typical when an elevated obstacle is in the way of the work such as when the work is above a lower roof or balcony.

Remember that when considering AWP equipment, a review of the manufacturer's specification sheet will define the horizontal outreach allowed based on the configuration of the AWP equipment.

Required Capacity

Questions to ask regarding capacity include:

- How many people need to be lifted?
  - The primary purpose of AWP equipment is to raise personnel and tools to temporarily work at height. AWP equipment have a specific capacity rating with the number of allowable people who can be on the platform.
  - AWP equipment have a specifically designed carrying capacity or rated work load (RWL) specified by the manufacturer. This is a total load, including personnel, tools and materials. However, you cannot add more personnel beyond the rated number of people, even if their combined weight is less than the RWL.
- What is required to be on the platform in addition to personnel? Are specific tools or materials required on the AWP equipment?
  - This will require sufficient rated capacity and the size of the platform to lift all items, in addition to allowable personnel on the platform.
  - Only properly secured tools and materials, which are evenly distributed and can be safely handled by workers from the platform, are allowed.
  - If the AWP equipment's allowable RWL cannot support the required loads referenced, the task must be reassessed.

Suitable Support and Driving Conditions

Questions to ask regarding suitable (i.e., slope, level, irregular, uneven) and adequate (i.e., capacity) support conditions include:

- At what stage in the job will the AWP equipment be needed and what will the ground conditions be like at that stage (i.e., loose fill; proximity to excavations; rough, prepared, paved, poured slab; and/or finished surface, etc.)?
- What is the terrain in which the machine will be both traveling and elevating?
    - Is it level, sloped, uneven, rough, frozen, wet, etc.?
    - Are there obstacles, debris, drop-offs, holes, depressions, etc.?

The consideration of ground conditions prompts further investigation such as:

- Are all areas capable of supporting the maximum floor/ground-loading imposed by the AWP equipment, including the load in the platform as defined by the AWP equipment manufacturer?
- Are there any underground utilities, vaults, trenches, drains, manholes or inspection covers that need to be avoided?
- Are there excavations, basements or cellars that may affect the stability of the AWP equipment?
- Are there other areas the AWP equipment should not be driven on while elevated?
- Will the weight of the AWP equipment, plus the RWL, impose any potential damage to the floor/ground surface?
- What is the maximum ground-bearing capacity at the work area, along the route, and to and from the work?
- What terrain and gradient will the AWP equipment have to cross or climb/descend to get to the work position? Is the visibility, separation from personnel and other equipment adequate so the AWP equipment is able to maneuver safely?
- Are there overhead obstructions or electrically energized conductors that will need to be avoided?
- What is the minimum approach distance to work-area related electrically energized conductors [reference CFR 1910.333(c) minimum approach distance (MAD)]?
- Is the potential presence of unauthorized personnel a concern that will need to be addressed?
- Are there any site-specific issues?
- Are there specific recommendations required by the AWP equipment's manufacturer in the operator's manual?

Note: Always refer to the manufacturer's operator's manual to identify the maximum ground pressure imposed by the AWP equipment as it varies based on the configuration of use.

Hazardous Atmosphere Conditions

Questions to ask regarding hazardous atmosphere conditions include:

- Has a qualified person determined if any location contains, or has the potential to contain, an explosive or flammable atmosphere as defined by ANSI/NFPA for powered industrial trucks, including type designations, areas of use, maintenance and operation?
- Are operators trained, as necessary, to recognize potentially hazardous atmosphere locations that may become evident during operation?

Work Located Inside

Questions regarding the power source required for the work area include:

- Are emissions from an internal combustion engine a concern for the workplace?
- Are there any flammable materials in the work area?

Questions regarding proper lighting:

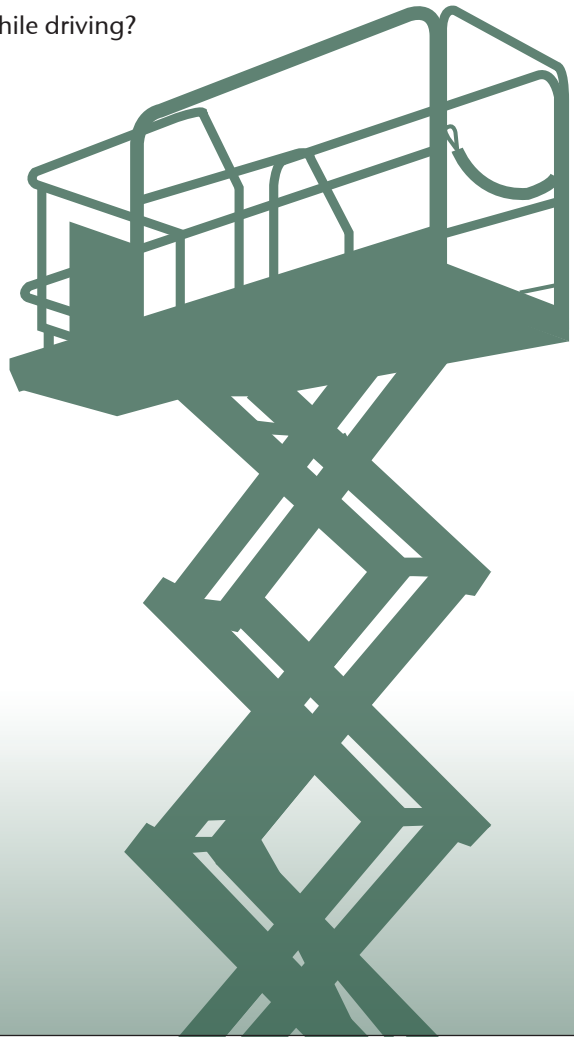
- Is there adequate lighting?
- Can the operator see overhead while stationary and while driving?

Questions regarding adequate ground support:

- What is the acceptable floor load?
- What does the AWP equipment weigh?
- What is the maximum floor loading pressure of the AWP equipment?
- What is the possibility of damaging the surface it is driving on?

Question regarding other activities taking place inside the facility:

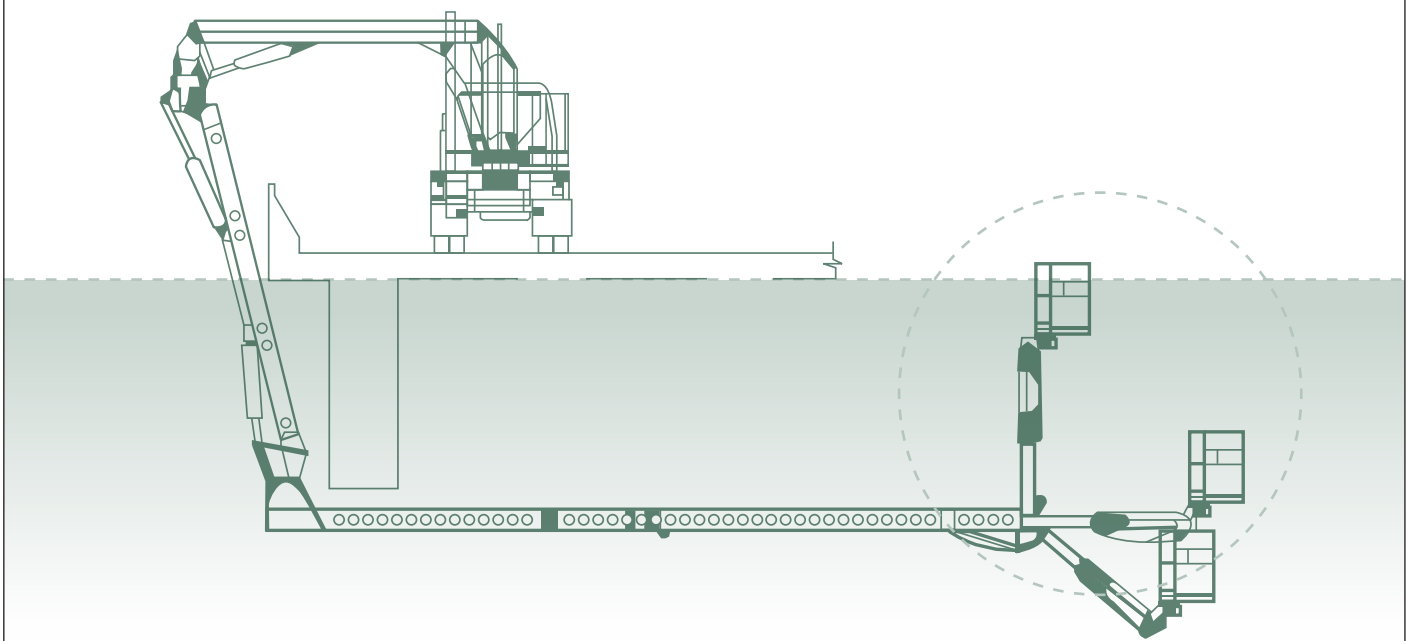
- What other types of equipment are working in the same area?



Access to the Work Area

Questions to ask regarding the work area include:

- What is the access from the point of delivery to the point of use and around the work area?
- Are there limitations to accessing the work area such as height, width and/or length? Answering this will point to specific types and sizes of AWP equipment. For instance:
  - Small scissors, vertical lifts and atrium lifts can go through standard doors and some are of a size and weight to allow access via elevators.
  - Many units are designed to traverse rough terrain at work areas in order to get to suitable elevating positions.
  - It is recommended that all AWP equipment, even those designed for rough terrain, be in the lowered position when traveling and only elevated once they reach their intended work area.
- Are there any obstacles, such as stairs, steep ramps, fragile objects, etc., that need to be maneuvered around? If there are, further investigation would include assessing:
  - How much base area is available at the work position?
  - Are there any material handling issues?
  - Will the AWP equipment be expected to move in the elevated position?
  - Does the AWP equipment require special access to the work area such as a crane loading it to the work area?
  - Are there vehicle/personnel traffic considerations that need to be addressed?



Other Factors to Consider

While not an all-inclusive list, the following additional questions should be considered when determining which AWP equipment to select. There may be more questions, depending on the specific situation.

- What are the electrical insulation requirements, if any, for the AWP equipment?
- Are there confined overhead areas in the workplace? What is the potential for a crushing hazard for AWP equipment's occupants?
- Is there a need for a small basket or specialty machine?
- Do the workplace conditions require outriggers or other leveling devices to safely elevate the AWP equipment?
- What is the expected wind speed (using an anemometer) and what does the manufacturer specify as a maximum wind speed rating for that specific unit?
- What are the potential weather conditions, including high winds, and how will those conditions impact the operator/occupant(s), equipment and ground?
- When operating indoors, are there emissions, lighting, etc., that should be considered?
- When operating outdoors, are there any obstructions, overhead energized conductors (power and bus lines) and electrically energized conductors on site, openings to go through, steel trusses, piping, etc.?
- Are there high-traffic areas that have the potential to interface with other vehicles (cranes, forklifts, etc.), pedestrians and/or unusual events (rail traffic, etc.)?
- Are there blind spots while operating or driving the AWP equipment?
- What is the width, length, height and turning radius of the AWP equipment?
- Are there hazardous locations that could create combustions, etc.?
- What fuel is allowed at the workplace and where will fueling take place?
- Is there a need for lifting, welding, electrical and/or air-powered equipment? Can they be accommodated by accessories or AWP equipment options that eliminate potential entanglement of cords, hoses, etc.?
- Does the work require a horizontal force that is within the manufacturer's rated capacity?

Commonly Available AWP Equipment

Certain AWP equipment may be more appropriate for various types of jobs, conditions, etc. Listed below are a few examples of AWP equipment categories, including the type(s) of lift within that category.

- Manually propelled, vertical-elevating AWP equipment
  - Level, slab-surface
- Self-propelled, vertical-elevating AWP equipment
  - Level, slab-surface
- Scissor lift
  - Level, slab-surface
  - Rough-terrain
  - Truck- or trailer-mounted
- Boom lift
  - Slab-surface
  - Rough-terrain
  - Telescopic (straight/stick boom)
  - Articulated
  - Atrium
  - Vehicle- or trailer-mounted
  - Tracked or wheel machines
- Bridge inspection and maintenance device
  - Level, slab-surface
  - Articulated
  - Truck- or trailer-mounted
  - Large platforms

Power Options for AWP Equipment

AWP equipment have different power options, which include:

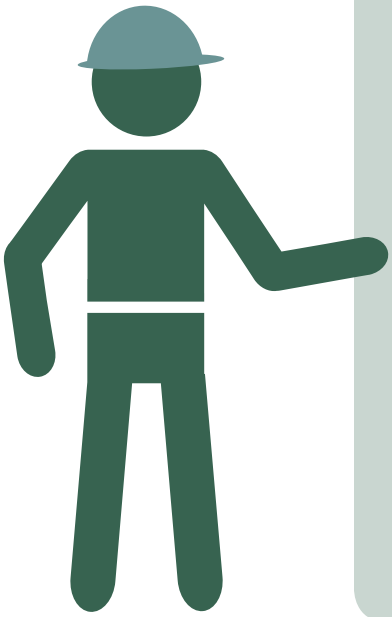
- Internal combustion (IC)
  - Gas
  - Propane
  - Dual fuel
  - Diesel
- Other
  - Hybrid
  - Air/pneumatic
  - Electric (AC/DC)

Still Unsure Which AWP Equipment is Most Appropriate for the Job?

Consult a qualified person, such as a rental store/dealer, for assistance. Provide information about your workplace risk assessment. Note that the specifics of each use must be considered.

Remember that manufacturers or a qualified person must review and approve, in writing, any special requirements such as unusual operating support conditions (e.g., operating from a trailer, rail car, floating vessel or similar equipment), or vacating or entering an elevated AWP equipment.

A Lift is Selected!



Once the most appropriate AWP equipment has been selected for the job and the conditions, there are other factors that must be addressed:

- The requirement for properly trained operator(s) for that type of lift
- The need for trained operator(s) familiarized with the selected AWP equipment
- The requirement for employers to communicate the workplace risk assessment and control measures
- The requirement for employers to monitor employees' performance and supervise their work to ensure the use, application and operation are in compliance with regulations, standards and control measures defined in the workplace risk assessment

For industry best practices regarding training and familiarization, read the *Statement of Best Practices of General Training and Familiarization for Aerial Work Platform Equipment*, available for download free of charge from the American Rental Association, the Association of Equipment Manufacturers, the International Powered Access Federation and the Scaffold & Access Industry Association. See the back of this document for the phone numbers and website addresses of these organizations.

Section VIII: Sample Workplace Risk Assessment Considerations

ANSI/SAIA A92 Standards include operator warnings and instructions that, at a minimum, must be considered when completing a workplace risk assessment. There also are other sources for potential hazards that should be considered in your site-specific workplace risk assessment. The following chart, while not inclusive, offers a few examples when addressing potential hazards.

	Hazard	Risk	Control Measure
1.	AWP equipment is operated on a slope, grade, ramp, etc., that exceeds the rating by the manufacturer.	**Tip-over**	1. Read and understand the manufacturer's operator's manual and be aware of the limitations of the AWP equipment. 2. Do not operate outside the allowable range as defined by the manufacturer. 3. Perform a workplace risk assessment. Identify and barricade unsafe work areas. 4. Have operator properly trained to know the appropriate travel speed and direction of travel on sloped surfaces.
2.	The load can make the AWP equipment unstable or damage the equipment.	**Tip-over**	1. Read the manufacturer's operator's manual and know the rated capacity prior to operation. 2. Monitor and supervise to ensure compliance. 3. Select the most appropriate AWP equipment for the work that needs to be accomplished. 4. Ensure AWP equipment operator/occupant(s) are aware of the weight of all materials to be carried in the AWP equipment, including personnel, and do not exceed the additional maximum load allowed.
3.	Ropes, cords, hoses, etc., are hanging from the AWP equipment or in the work area, creating potential for entanglement with the work platform and/or damage to property.	**Tip-over**	1. Avoid hanging any material outside the work platform. 2. Maintain a clean and orderly work area; do not allow hanging objects in the work area of the AWP equipment.
4.	Platform is overloaded from the ground or at height.	**Tip-over**	1. Always be aware of the requirements of the work to be performed and select the most appropriate AWP equipment to support the maximum allowable rated workload. 2. The operator shall read the manufacturer's operator's manual in order to be aware of the RWL of the AWP equipment prior to operation and know the total weight of all personnel and materials being placed on the platform. 3. Ensure that the load is appropriately placed on the platform and platform extension as defined by the manufacturer for proper load distribution. 4. Extra precautions must be made if a load is introduced to the AWP equipment while the platform is elevated (e.g., lowering equipment for replacement). Specific knowledge of the total weight must be known prior to operating (as stated in Nos. 1-3 above).

	Hazard	Risk	Control Measure
5.	AWP equipment is being used like a crane to lift items even though the AWP equipment is not designed to lift materials except on the platform and within the manufacturer's RWL. Lifting items on the guardrails or by attaching, in any manner, to the AWP equipment (not approved by the manufacturer) may result in damage or failure of the machine. The damage may not be obvious at the time of loading, but fatigued components could fail in the future.	**Tip-over**	1. Never allow the AWP equipment to be used except as designed and approved by its manufacturer. 2. Never add frameworks, mounting of attachments for holding/lifting tools and materials or other modifications without the prior written permission of the AWP equipment manufacturer. 3. Never exceed the RWL defined by the AWP equipment manufacturer.
6.	AWP equipment is being used on a barge, truck bed, floating vessel, scaffolding or similar type of equipment. The supporting equipment may be unable to support the load, not provide a level base that may result in shifting loads/exceeding allowable slope, etc., of the AWP equipment in use.	**Tip-over**	Only allow AWP equipment to be used on unusual support equipment/locations when the application has been approved in writing by the manufacturer or a qualified person.
7.	Site conditions, such as the support surface, congestion, visibility, slope, etc., when driving the AWP equipment. Higher travel speed limits the control the operator has under these conditions and exposes personnel to collisions or injuries.	**Tip-over**	1. AWP equipment operator must employ safe-use guidelines for travel as defined by the manufacturer in the operator's manual. 2. Always travel at the low travel speed when working at elevation or when appropriate for conditions. 3. Always maintain a safe distance from obstacles, holes, slopes, etc., to ensure safe travel.
8.	The work platform becomes caught or snagged on a structure or object that prevents it from normal motion of operation. The power of the hydraulic systems on the AWP equipment can create significant forces if the platform is stuck and the control functions are used. Great potential harm to personnel can occur in this instance.	**Tip-over**	Immediately **stop** the operation of the AWP equipment from the platform and remove the operator/occupant(s) prior to any attempts to free the platform by using the lower ground controls.
9.	Work to be performed requires significant side or horizontal force. Increasing the side load or horizontal force beyond the rated horizontal force set by the manufacturer can result in a tip-over. This can become even more likely if not situated on a hard-level surface.	**Tip-over**	Read the manufacturer's operator's manual prior to operation. Know the side force that will be required for the task performed and select the most appropriate AWP equipment for the project or change the work process to be within the limits of the machine's horizontal forces.
10.	The ground condition in the work area varies during the course of the project. AWP equipment is dependent on a hard, level surface that is capable of supporting its load in all working configurations.	**Tip-over**	1. Have a qualified person ensure that the surface the AWP equipment will travel across and rest upon is capable of supporting the load as defined by the manufacturer for the AWP equipment in all configurations. Be aware that in certain configurations, up to 80 percent of the AWP equipment's weight maybe on one tire or outrigger. 2. Operator is to perform a workplace inspection before and during use to check for possible hazards. 3. Site supervisor additionally should perform workplace inspection and verify the operation is performing to compliance.

	Hazard	Risk	Control Measure
11.	The ground conditions are unlevel and irregular. Some AWP equipment are designed to operate on limited slopes.	**Tip-over**	1. Select the most appropriate AWP equipment with a rated slope for the work area. 2. Select a machine with outriggers and leveling devices that can address the workplace conditions. 3. Outriggers, stabilizers, extendable axles, oscillating axles or other stability-enhancing devices must be deployed and locked as required by the manufacturer.
12.	Rough terrain or poor ground conditions exist. AWP equipment may exceed manufacturer's recommended slope.	**Tip-over**	Select only AWP equipment that is designed to operate on rough-terrain surfaces and use it in compliance with the manufacturer's recommendations.
13.	AWP equipment is struck by vehicle or mobile equipment.	**Tip-over or Fall from height**	1. Identify and comply with local ordinances or safety standards established for the workplace. 2. Restrict the work area around the AWP equipment, placing warnings, such as flags, a roped-off area, flashing lights, barricades, etc., around the area. 3. Assign a spotter to control and warn operators of other moving equipment. 4. Schedule work to eliminate potential conflicts.
14.	Drivable boom lift hits a bump or drives over a curb.	**Tip-over or Fall from height**	A workplace risk assessment must be done prior to and during work to verify a safe travel route.
15.	Guardrail is not installed or damaged.	**Fall from height**	1. Ensure a daily prestart inspection occurs and any missing, damaged or non-functioning components are repaired prior to operation. Apply accident-prevention tag. Make sure it stays on until the equipment is repaired to proper operation. 2. Ensure that access gates or openings are closed per manufacturer's instructions.
16.	Operator/occupant(s) are: ■ Not wearing proper PFPE. ■ Not properly connected to the anchorage. ■ Not using proper PFPE for task. ■ Using damaged PFPE. For instance, the PFPE has cuts, the stitching is worn, etc.	**Fall from height**	1. Ensure that all AWP equipment operators/occupant(s) are trained on use and inspection of PFPE. Always be in compliance with manufacturer's recommendations. 2. Monitor to ensure that only manufacturer-supplied anchorages are used for fall protection system. 3. Provide operator/occupant(s) correct PFPE when required (always on boom-type AWP equipment) and monitor to ensure that they use it as required. 4. Ensure daily prestart inspection includes personal protective devices.
17.	Operator/occupant(s) attempt to reach beyond the capacity of the platform by climbing on guardrail or using planks, ladders or other devices to achieve additional height.	**Fall from height**	1. Ensure proper training and supervision for compliance. 2. Always maintain firm footing on the floor of the platform; never allow the use of ladders or other devices to gain additional height. 3. Ensure most appropriate AWP equipment is selected to perform the work required. 4. Reinforce with operators that safety cannot be compromised by shortcuts. 5. Ensure proper PFPE is being utilized. 6. Make sure management monitors, supervises and warns.

	Hazard	Risk	Control Measure
18.	Operator/occupant(s) vacate or enter an elevated platform.	**Fall from height**	1. Train operator/occupant(s). 2. Ensure supervision and monitoring are in place. 3. Choose most appropriate AWP equipment for the work to be performed. 4. Use proper PFPE as required. 5. Vacate/enter an elevated platform only if approved by the manufacturer and then only by following the manufacturer's recommended procedure.
19.	The requirement to drive through openings, access areas with overhead structures, work between steel structures, etc.	**Crushing**	1. Whenever possible, restrict any AWP equipment's activity where overhead obstructions are present. 2. Work with a partner when high-risk work is involved. 3. Have a ground person familiar with the ground controls available in case of an emergency. 4. Ensure that the AWP equipment operator is experienced, thoroughly trained and familiar with all control functions when exposed to known overhead clearance work.
20.	Personnel or equipment may be hit by the lowering of AWP equipment/ structure.	**Crushing**	1. The operator must ensure that the work area of operation is clear prior to lowering or driving the AWP equipment. 2. If personnel are expected to be in the work area, flag off the AWP equipment work area. 3. If the AWP equipment is always in a work environment, select one fitted with a motion alarm to make sure personnel are aware of the AWP equipment's movements.
21.	Proximity in work area to energized conductors (power lines)/electrically energized conductors.	**Electrocution**	1. Identify all potential electrocution hazards prior to commencing work and take appropriate action to prevent any contact with a power source, disconnect and tag out power. 2. Clearly mark the minimum approach distance for the AWP equipment, including the reach of a boom beyond the base. 3. Place markers on the ground to identify them and remind AWP equipment operators of any overhead power source. 4. As electrical work requires a qualified person to perform the work, ensure only qualified individuals assess the risk and determine the appropriate action for safe use in the work area.
22.	Loud noise(s), falling objects or flying debris from sawing/cutting. For example, foot injuries from falling items or being hit by moving objects, acid spill injuries from checking a battery, welding, etc.	**Environmental hazards to workers in the work area**	1. Provide and ensure all workers are utilizing proper PPE such as a hard hat, eye and ear protection, gloves, steel-toed shoes, etc. 2. Monitor personnel for compliance.
23.	Operator identifies problems or malfunctions with the AWP equipment but continues to operate the machine. When the AWP equipment ceases operation, creating a malfunction that results in machine failure.	**Damaged machine hazard**	1. Operator performs daily prestart inspection and reports issues immediately. 2. Operator's supervisor monitors that prestart inspections are being performed. 3. AWP equipment is tagged out of service and secured until service/repairs are completed. 4. Operator addresses machine issues immediately during use.

	Hazard	Risk	Control Measure
24.	Workers are exposed to a health risk from the material in the atmosphere and/or there is the potential of fire.	**Hazardous atmosphere**	1. Ensure a competent person has assessed the work area prior to giving authorization to operating in this area and that the area is marked approved for operation. 2. Ensure a properly equipped AWP equipment is used for the hazardous classification intended. 3. Provide workers with an understanding of what to look for if there is potential exposure in the work area and what action to take if an incident arises. 4. Operators will immediately report any potentially hazardous location that becomes evident during operation.
25.	Fueling or charging the battery introduces hazardous fumes into the work area, creating potential for fire or harm to workers.	**Hazardous atmosphere**	Fuel or charge batteries in a well-ventilated area, free from flames or sparks, or other hazards that may cause a fire or explosion.
26.	Multiple workers are in the general work area of the operating AWP equipment. The AWP equipment may hit and injure workers on the ground when moving and/or the operator/ occupant(s) of the AWP equipment may drop objects on workers who are below.	**Collision**	1. Operator shall ensure that the work area is clear of personnel and equipment prior to any movement — driving, lowering, etc. — of the AWP equipment. 2. If the potential of dropping tools or equipment exists, either the work area below the elevated operator/ occupant(s) must be restricted or steps need to be taken to prevent tools and equipment from dropping to lower areas (e.g., tether tools, use workplace netting, etc.) 3. All workers must be aware of the potential movement of equipment such as sounding a horn prior to driving or installing a motion alarm.
27.	Others in the work area or unauthorized individuals attempt to use the AWP equipment. Only authorized personnel who have been trained and familiarized are allowed to operate AWP equipment. Non-authorized individuals can be exposed to all known hazards, which could damage the equipment, place themselves and others in harm's way, and cause property damage.	**Unauthorized use**	1. Always secure and implement means to prevent unauthorized use of the AWP equipment such as elevating the work platform at the end of the shift and removing the key. 2. Ensure that the operator is aware not to allow anyone not authorized by his employer to use the AWP equipment, even for a few minutes.
28.	Interlocks or other safety devices are tampered with or disconnected to allow operator to maneuver AWP equipment in manner restricted by the manufacturer, such as disconnecting the noise from warning alarms, etc. Modification or alterations to AWP equipment in any manner can create unintended hazards and risks for the operator/occupant(s) and personnel in the work area.	**Unauthorized modification**	1. **Never** alter or disable any safety device and ensure that no one else has either by completing the required daily prestart inspection and function test, and checking that the safety devices are operating correctly. 2. **No** modifications may be made without the prior written permission of the manufacturer to ensure that compliance with all standards and regulations has been met.

AWP Equipment Workplace Risk Assessment and Control Measure

This template may be used to assess and manage risk associated with a specific project at a specific location.

Name of RA:_____ Project/Location: _____

Date of Assessment: _____ _____

Hazard List possible hazards		**Potential risk from hazard** Describe type of risk	**Potential of risk** H	M	L	**Severity of risk** H	M	L	**Control Measure**
1.									
2.									
3.									
4.									
5.									
6.									
7.									

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Scaffold & Access Industry Association
400 Admiral Blvd.
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Phone: 816-595-4860
saiaonline.org

To order or download this document or the ***Statement of Best Practices of General Training and Familiarization for Aerial Work Platform Equipment*** or the ***Statement of Best Practices of Personal Fall Protection Systems for Aerial Work Platform Equipment,*** contact any of the above organizations.

Resources:
OSHA.gov
ANSI.org

To order ANSI/SAIA A92 Standards or Manuals of Responsibilities, contact:

Scaffold & Access Industry Association
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