

Aerial Lift- Scissor Lift Operator Safety Training

Participant Workbook

WorkSafe Consulting

Participant Name: _____



WorkSafe Consulting Presents - Aerial Lift- Scissor Lift Operator Safety Training.

Work Safe Consulting is committed to helping Employers and Employees to take a pro-active approach to loss prevention in the workplace.

Aerial Lift- Scissor Lift Operator Safety

How Accidents Happen

Legislation

Learning Objectives

By the end of this module the participant will be able to:

1. Understand how accidents happen on Aerial Lift Platforms.
2. Explain the legislative responsibilities for the employer, supervisor and the employee.
3. Identify legal rights and responsibilities.
4. Understand the requirements under the Act and the Regulations.



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Learning Objectives

By the end of this module, participants will be able to:

1. Demonstrate their knowledge of the legislation as it pertains to working with personnel lifting devices.
2. Identify and recognize safety hazards associated with working with aerial lift platforms and be able to identify all the risks associated with the equipment, working at heights etc.
3. Assess safety hazards associated with working with aerial lift platforms.
4. Understand controls associated with working aerial lift platforms and ensure the protection of yourself and others.
5. Demonstrate how to conduct an equipment inspection.
6. Demonstrate an understanding of operator controls, safety marks, equipment limitation and restrictions. Textbook Safe Operation as per legislative standards and the manufacturers' specifications.
7. Understand Emergency Response in safely using the emergency release to lower someone down

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Introduction

How do accidents happen in aerial lift platforms?

Take a few minutes and discuss as a group. Write down some reasons below.

Are accidents preventable?

Explain:

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Accidents involving personnel lifting devices

Accident Profile

#1 Garbage truck driver died from collision on Aerial lift platform

A garbage truck sideswiped a boom lift aerial work platform while a worker was repairing a traffic signal. The collision threw the man from the personnel basket and killed him. When the operator fell from the basket, he hit his head on the bottom of the platform several times. According to reports, orange cones were in place around the intersection where the accident occurred.

This is not a freak accident. These accidents are fairly common. Although the worker was wearing a safety harness and was tied off to the floor of the machine, his lanyard was too long and was not suitable for the height he was working at to prevent him from hitting his head several times on the base of the machine. The impact of the garbage truck hitting the boom truck, caused the boom truck to flex, which ejected the worker out of the machine, swinging him underneath the platform where the boom continued to bounce causing his head to hit the underside multiple times, resulting in severe head trauma.

What could have prevented this accident from happening?

Group discussion.

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Accidents involving personnel lifting devices

Accident Profile

2 Employee Killed in Fall when scissor Lift Overturns

Employee #1 was installing a sprinkler system in the auditorium of a movie theater under construction. He was using a self-propelled scissor lift that he was driving with the lift raised to its maximum height of 20 feet. He apparently drove the scissor lift off an approximately 4 inches high ledge. It overturned and Employee #1 fell approximately 25 feet. He was killed.

Accident Profile

3 Employee Killed When Thrown From the Lift Basket

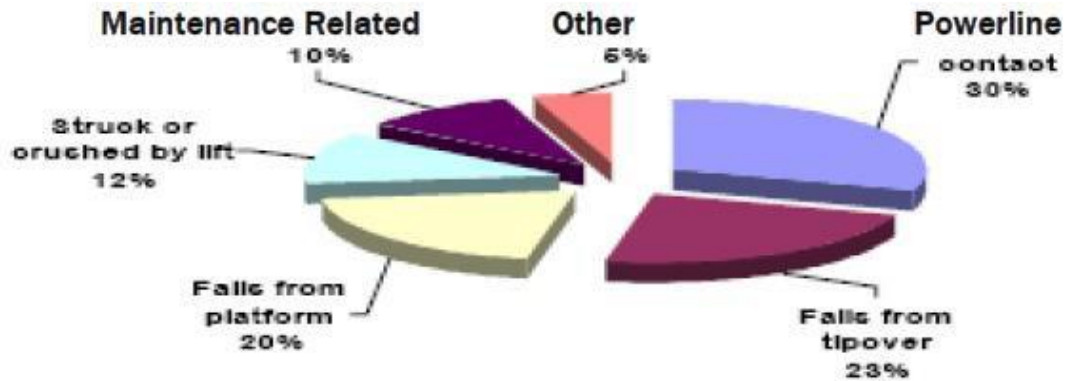
An employee was using an aerial lift platform when he attached a large pipe to the side of the platform to lower the pipe to the ground. Unfortunately when the worker started lowering the platform, the weight or side load on the machine was too great causing the aerial lift platform to tip over and the worker was crushed under the machine and died due to crushing injuries.

Accident Profile

4 Power Line worker died from severe trauma

A power line worker was backed over by an aerial lift platform, when he was working in proximity to the aerial lift platform. The platform rolled backwards knocking the worker to the ground. He was caught by the differential and leaf spring bolts. The vehicle dragged the worker approximately 15 meters. He sustained severe trauma to his chest and head and died of his injuries.

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Power Line Contact	30%
Falls From Tip over	23%
Falls From Platform	20%
Struck By or crushed by Lift	12%
Maintenance Related	10%
Other	6%

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The Legislation

Each Province in Canada regulates the operation of “personnel Lifting Devices” and all operators are to be trained according to the requirements of the provincial regulations and be considered competent.

“Only trained and authorized personnel must be permitted to operate the “personnel lifting device”.

Before using the platform, the operator must:

1. Read and Understand the Manufacturers’ specification of the particular machine the operator will use.

Why?

2. Read and understand decals and safety marks on the machine.
3. On a daily basis, prior to each shift, the machine must be given a thorough inspection. Key Off Inspection and a Key On Inspection.

Competency

- 1 (1) In this Act, “competent person” means a person who,
 - (a) is qualified because of knowledge, training and experience to organize the work and its performance,
 - (b) is familiar with this Act and the regulations that apply to the work, and
 - (c) has knowledge of any potential or actual danger to health and safety in the workplace.

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Definitions

"Aerial platform"

Means a work platform attached to an extendible or articulating support that is designed to position personnel and their tools and materials, at elevated work locations.

"Vehicle-mounted aerial platform" (bucket truck)

Means an aerial platform connected to an extendible or articulating support that is mounted on a vehicle. The elevating functions of the aerial platform are typically controlled from the platform, often with a secondary "overriding" set of controls in the vehicle, whereas the mobile functions of the vehicle are typically controlled only from the vehicle.

"Self-propelled elevated work platform" (scissor lift)

Means equipment with an integrated mobile power source and extendible supports connected to an aerial platform, which can be elevated vertically but cannot be positioned completely beyond the base of the equipment. The mobile and elevating functions of the equipment are typically controlled from the aerial platform.

"Boom-type elevating work platform" (boom lift)

Means equipment with an integrated mobile power source and extendible support connected to an aerial platform which can be positioned completely beyond the base of the equipment. The mobile and elevating functions of the equipment are typically controlled from the aerial platform.

"Materials handling equipment" (MHE)

Means equipment, including its supporting structures, auxiliary equipment and rigging devices, used to transport, lift, move or position persons, materials, goods or things and includes mobile equipment used to lift, hoist or position persons, but does not include an elevating device that is permanently installed in a building.

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Duties of employers and other persons

Duties of Employers

25(1) An employer shall ensure that,

- (a) The equipment, materials and protective devices as prescribe are provided;
- (b) The equipment, materials and protective devices provided by the employer are maintained in good condition;
- (c) The measures and procedures prescribed are carried out in the workplace;
- (d) The equipment, materials, protective devices provided by the employer are used as prescribed; and
- (e) A floor, roof, wall, pillar, support or other part of a workplace is capable of supporting all loads to which it may be subjected without causing the materials therein to be stressed beyond the allowable unit stressed established under the Building Code Act

Idem

(2) Without limiting the strict duty, imposed under subsection (1), an employer shall,

- (a) Provide information, instruction and supervision to a worker to protect the health and safety of the worker;
- (b) In a medical emergency for the purpose of diagnosis or treatment, provide upon request, information in the possession of the employer, including confidential business information, to a legally qualified practitioner and to such other persons as may be prescribed;
- (c) When appointing a supervisor, appoint a competent person;

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- (a) Acquaint a worker or a person in authority over a worker with any hazard in the work and in the handling, storage, use, disposal and transport of any article, device, equipment or a biological, chemical or physical agent;
- (b) Afford assistance and co-operation to a committee and health and safety representative in the carrying out by the health and safety representative or any of their functions;
- (c) Only employ in or about a workplace a person over such age as may be prescribed;
- (d) Not knowingly permit a person who is under such age as may be prescribed to be in or about a workplace;
- (e) Take every precaution reasonable in the circumstances for the protection of a worker;
- (f) Post, in the workplace, a copy of this Act and any explanatory material prepared by the Ministry, both in English and the majority language of the workplace, outlining the rights, responsibilities and duties of workers;
- (g) Prepare and review at least annually a written occupational health and safety policy and develop and maintain a program to implement that policy;
- (h) Provide to the committee or health and safety representative the results of a report respecting occupational health and safety that is in the employer's possession and, if that report
 - (i) Advise workers of the results of a report referred to in clause (1) and, if the report is in writing, make available to them on request copies of the portions of the report that concern occupational health and safety.

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Additional Duties of the Employer

26 (1) In addition to the duties imposed by section 25, an employer shall,

- (a) Establish an occupational health service for workers as prescribed;
- (b) Where an occupational health service is established as prescribed, maintain the same according to the standards prescribed;
- (c) Keep and maintain accurate records of the handling, storage, use and disposal of biological, chemical or physical agents as may be prescribed;
- (d) Accurately keep and maintain and make available to the worker affected such records of exposure of a worker to biological, chemical or physical agents as may be prescribed;
- (e) Notify a Director of the use or introduction into a workplace of such biological, chemical or physical agents as may be prescribed;
- (f) Monitor at such time or times or at such interval or intervals the levels of biological, chemical or physical agents in a workplace and keep and post accurate record thereof as prescribed;
- (g) Comply with a standard limiting the exposure of a worker to biological, chemical or physical agents as prescribed;
- (h) Establish a medical surveillance program for the benefit of workers as prescribed;
- (i) Provide for safety-related medical examinations and tests for workers as prescribed;
- (j) Where so prescribed, only permit a worker to work or be in the workplace, who has undergone such medical examinations, tests or x-rays as prescribed and who is found to be physically fit to do the work in the workplace; and
- (k) Where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for the protection of a worker; and
- (l) Carry out such training programs for workers, supervisors and committee members as may be prescribed.

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Duties of the Supervisor

27 (1) A Supervisor shall ensure that a worker,

- (a) Works in the manner and with protective devices, measures and procedures required by this Act and the Regulations; and
- (b) Uses or wears the equipment, protective devices or clothing that the worker's employer requires to be worn.

Additional duties of the supervisor

2. Without Limiting the duty imposed by subsection (1) a Supervisor shall,

- (a) Advise a worker of the existence of any potential or actual danger to the health and safety of the worker of which the supervisor is aware;
- (b) Where so prescribed, provide a worker with written instructions as to the measures and procedures to be taken for the protection of a worker; and
- (c) Take every precaution reasonable in the circumstances for the protection of a worker.

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Duties of the Worker

28 (1) A worker shall,

- (a) Work in compliance with the provisions of this Act and the Regulations;
- (b) Use or wear the equipment, protective devices or clothing that the worker's employer requires to be used or worn;
- (c) Report to his/her employer or supervisor the absence of or defect in any equipment or protective device of which the worker is aware and which may endanger himself, herself or another worker; and
- (d) Report to his/her employer or supervisor any contravention of this Act or the Regulations or the existence of any hazard of which he or she knows;

Idem

2 No worker shall,

- (a) Remove or make ineffective any protective device required by the regulations or by his or her employer, without providing an adequate temporary protective device and when the need for removing or making ineffective the protective device shall be replaced immediately;
- (b) Use or operate any equipment, machine, device or thing or work in a manner that may endanger himself, herself, or any other worker; or
- (c) Engage in any prank, contest, feat of strength, unnecessary running or rough and boisterous conduct

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Legislated Responsibilities

Employer, Supervisor and Worker

Worksheet # 1

Identify the Section Number and Clause where you would find the following:

1. List the duties of the employer, and where can they be found in the Act.

2. List the duties of supervisors, and where they can be found in the Act.

3. List the duties of workers and where they can be found in the Act.

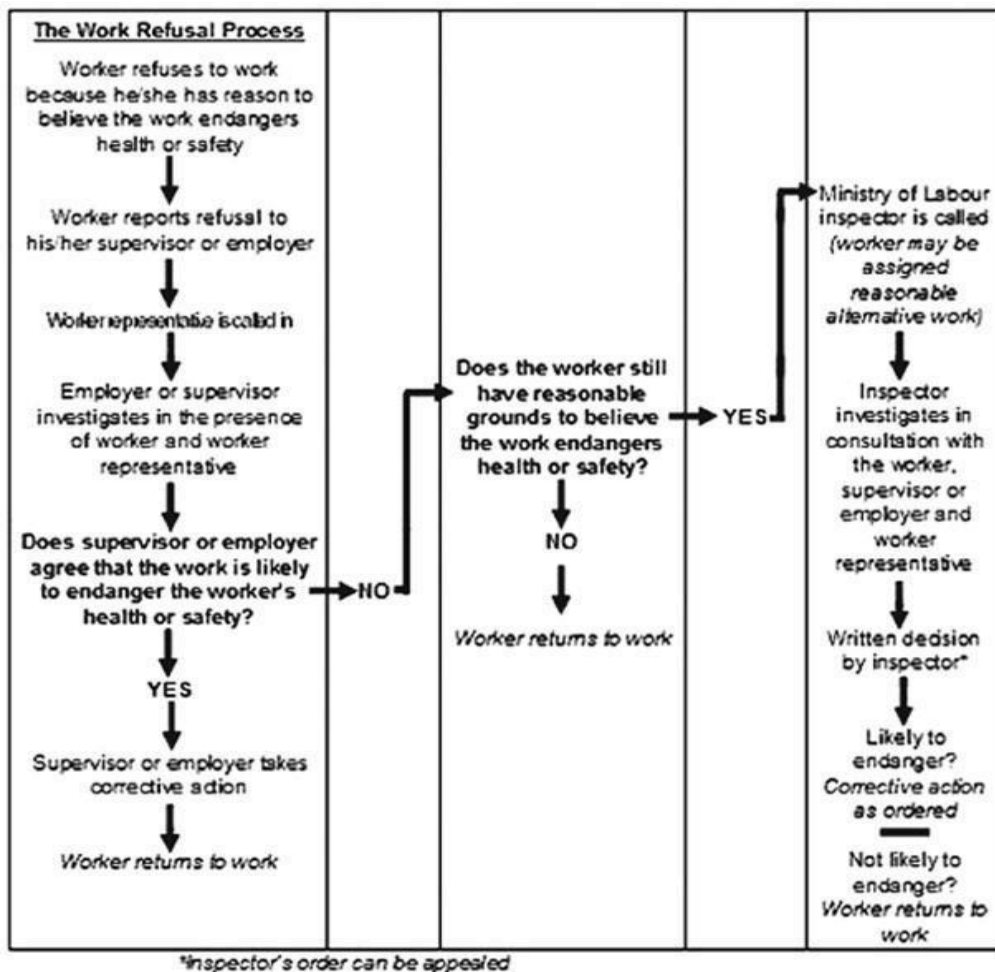
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Rights of Workers...

Workers have the right to:

- Know about hazards in the workplace
- Participate in health and safety
- Refuse unsafe work in the workplace
- Stop work where a *Dangerous circumstance exists*

* Certified Members of the Joint Health and Safety Committee*



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Reprisals by employer prohibited

No discipline, dismissal Etc by employer shall,

50 (1) No employer or person acting on behalf of an employer

- (a) Dismiss or threaten to dismiss a worker;
- (b) Discipline or suspend or threaten to discipline or suspend a worker;
- (c) Impose any penalty upon a worker; or
- (d) Intimidate or coerce a worker,

Onus of Proof

(5) On an inquiry by the Ontario Labour Relations Board into a complaint filed under subsection (2), the burden of proof that an employer or person acting on behalf of an employer did not act contrary to subsection (1) lies upon the employer or the person acting on behalf of the employer.

Offences and Penalties

Penalties

66 (1) Every person who contravenes or fails to comply with,

- (a) A provision of this Act or the regulations;
- (b) An order or requirement of an inspector or director; or
- (c) An order of the Minister, is guilty of an offence and on conviction is liable to a fine not more than \$25,000 or to imprisonment for a term of not more than twelve months, or to both.

Idem

(2) If a corporation is convicted of an offence under subsection (1), the maximum fine that may be imposed under the corporation is \$500,000 and not as provided therein.

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A Case Study

Worksheet # 2

A scissor lift operator is told by his supervisor he needed to move the scissor lift to a location that was next to a hill, the ground was wet and the operator was not sure of the stability of the ground below. He stopped to ask the supervisor further instructions and also mention his concerns. The Supervisor told the scissor lift operator to get a move on and get the scissor lift moved. The operator refused and was told by his Supervisor that he could go home, he was not needed anymore for the day.

1. What duties does the workers employer have under the Act and regulations in this situation?

2. What rights does the worker have in this situation?

3. He refused the unsafe work and was told by his supervisor that he was not needed and could go home. Can his supervisor do this. Why or Why not? What can he do next?

4. How can the employer correct this situation and make sure the work is safe for all workers in the future?

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Regulations:

We have discussed the Act (Occupational Health and Safety Act) which describes the what. For example "what must happen in the workplace, for each workplace party, the employer, the supervisors and the workers. This lays out the framework of what we call the Internal Responsibility System". This means that everyone is responsible to see to it that Safety is happening in the workplace.

The Regulations- describe the "How"



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The Regulations

Lifting Devices

51 (1) A lifting device shall,

- (a) Be so constructed of such strength and be equipped with suitable ropes, chains, and other fittings so as to adequately ensure the safety of all workers.
- (b) Be thoroughly examined by a competent person to determine its capability of handling the maximum load as rated,
 - (i) Prior to being used for the first time, and
 - (ii) Thereafter as often as necessary but not less frequently than recommended by the manufacturer and in any case, at least once a year.

And a permanent record shall be kept, signed by the competent person doing the examination;

- (c) Be plainly marked with sufficient information so as to enable the operator of the device to determine the maximum rated load that the device is capable of lifting under any operating condition;
- (d) Have a cab, screen, canopy guard or other adequate protection for the operator where the operator may be exposed to the hazard of falling material;
- (e) When it is a pneumatic or hydraulic hoist, have controls that automatically return to their neutral position when released.

(2) A lifting device shall be operated,

- (a) Only by,
 - (i) A competent person or
 - (ii) A worker being instructed who is accompanied by a competent person; and
- (b) In such a way that,
 - (i) No part of the load passes over any worker,

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52 A crane, lift truck or similar equipment shall be used to support, raise or lower a worker only when,

- (a) A worker is on a platform,
 - (i) Equipped with adequate safety devices that will automatically prevent the platform and load from falling if the platform's normal support fails,
 - (ii) Suspended from a boom that does not move, and the person is attached to a separate lifeline suspended from the boom or a fixed support capable of supporting at least four times the weight of the worker, or
 - (iii) Attached to a mast, or boom which,
- (a) Is hydraulically or pneumatically operated, and
- (b) Is equipped with a safety device that will prevent free fall of the platform in the event of a pressure line failure;
- (b) where the equipment is not designed for the specific purpose of hoisting personnel, the load applied to the crane, lift truck or similar equipment is less than one half the maximum rated load;
- (c) the platform has a sign indicating the load described in clause (b);
- (d) where controls are provided at more than one location,
 - (i) each control station is provided with means whereby the operator can shut off power to the equipment, and
 - (ii) interlocks have been provided so that only one station can be operative at any time; and
 - (iii) (e) except when the controls are operated from the platform, the controls are attended and operated by another worker.

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56 Where the operator of a vehicle, mobile equipment, crane or similar material handling equipment does not have full view of the intended path of travel of the vehicle, mobile equipment, crane, or similar material handling equipment or is load, the vehicle, mobile equipment, crane or similar material handling equipment shall only be operated as directed by a signaler who is a competent person and who is stationed,

- (a) in full view of the operator,
- (b) with a full view of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment and its load; and
- (c) clear of the intended path of travel of the vehicle, mobile equipment, crane or similar material handling equipment and its load.

60 (1) Except as prescribed by subsection 42.2, where a vehicle, crane or similar equipment is operated near a live power line carrying electricity at more than 750 volts, every part of the equipment shall be kept at least the minimum distance from the live power line set out in column 2 of the Table for the particular voltage set out opposite there to in column 1 of the Table:

Table

Minimum distance from live power lines for electricity	
Column 1	Column 2
Voltage of live power line	Minimum Distance
750 to 150,000 volts	3 metres
150,001 to 250,000 volts	4.5 metres
250,001 volts and over	6 metres

Section 74, Temporarily Elevated Equipment

74 Machinery, equipment or material that is temporarily elevated and under which a worker may pass or work shall be securely and solidly blocked to prevent the machinery, equipment or material from falling or moving.

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Protective Equipment

79 A worker required to wear or use any protective clothing, equipment, device shall be instructed and trained in its care and use before wearing the protective clothing, equipment, device.

80 A worker exposed to the hazard of head injury shall wear head protection appropriate in the circumstances

81 A worker exposed to eye injury shall wear eye protection appropriate in the circumstances

82 A worker exposed to the hazard of foot injury shall wear foot protection appropriate in the circumstances.

83 (1) Long hair shall be suitably confined to prevent entanglement with any rotating shaft, spindle, gear, belt or other source of entanglement.

(2) Jewelry or clothing that is loose or dangling or rings shall not be worn near any rotating shaft, spindle, gear, belt or other source of entanglement.

84 A worker exposed to the hazard of injury from contact of the worker's skin with,

- (a) a noxious gas, liquid, fume or dust;
- (b) a sharp or jagged object which may puncture, cut or abrade the worker's skin;
- (c) a hot object, hot liquid or molten metal; or
- (d) radiant heat

shall be protected by,

- (e) wearing apparel sufficient to protect the worker from injury, or
- (f) a shield, screen or similar barrier, appropriate in the circumstances.

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85 Where a worker is exposed to the hazard of falling and the surface to which he or she might fall is more than three metres below the position where he or she is situated,

- (a) the worker shall wear a serviceable safety belt or harness and lifeline adequately secured to a fixed support and so arranged that the worker cannot fall freely for a vertical distance of more than 1.5 metres: and
- (b) the fall arresting system described in clause (a) shall,
 - (i) have sufficient capacity to absorb twice the energy and twice the load that under the circumstances of its use may be transmitted to it, and
 - (ii) be equipped with a shock absorber or other devices to limit the maximum force to 8.0 kilonewtons to the wearer. R.R.O.1990, Reg. 851, s 85.

Construction Regulations

26. (1) Unless a safety net or travel restraint system is being used, a worker shall wear a fall arrest system if the worker may fall,,
- (a) a distance of more than three meters;
 - (b) into operating machinery;
 - (c) into water or another liquid; or
 - (d) into or onto a hazardous substance or object.
- (2) In subsection (1), "travel restraint system" means a mechanism, which restricts the movement of a worker on a work surface.

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Using the Regulations

Worksheet # 3

Find the Sections that pertain to the following:

1. Minimum Distance to Live Overhead Lines

2. Lifting Device Regulations

3. Travel Restraint

4. Signal Person Regulation

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Types of Aerial Platforms Safety Marks and Inspections

Learning Objectives

By the end of this module the participant will be able to:

1. Understand the different types of Aerial Platforms.
2. Identify Safety Marks that are meant to warn the operator of the dangers.
3. Understand the visual inspection and the operational inspection.
4. Demonstrate their knowledge in the above by conducting a pre-operational inspection.



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Vertical Ariel Platforms



Boom Supported Aerial Platforms



There are three basic types of Aerial Lift Platforms

1. The Manual Vertical Aerial Platform
2. The power vertical Aerial Platform (Scissor Lift)
3. The boom supported Aerial Platform

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Know your Equipment

It is the responsibility of the operator to read and understand the operator's manual and any manufacturer's manual(s) before operating the machine.

The operator's manual should be on the machine at all times and available to anyone who operates it or does maintenance work on it.



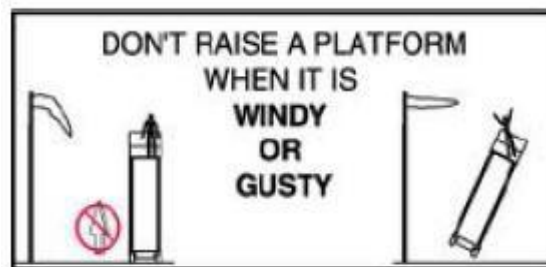
Know what the Safety Marks Mean



Qualified Operator



Falling Hazard



Windy Conditions

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Warning Stickers



Maximum Rated Load

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Crushing Hazards



Overhead Obstructions

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Inspections

Annual Inspection:

The owner of the Aerial Lift Platform is required to complete an annual inspection of the equipment. All components as per manufacturers specifications are to be inspected and a service sticker is placed on the outside of the vehicle with the date listed of the inspection.

Frequent Inspections:

The owner of the Aerial Lift Platform is required to perform frequent inspections on equipment after so many hours of operation. For example: Equipment that has been in service for 3 months or after 150 hours of operation, whichever comes first and a machine that has been out of service or not in use for a period longer than 3 months.

Daily Inspections:

Prior to putting the machine to work each day, a person will conduct a daily pre operational inspection. This is conducted at the beginning of each day or the beginning of each shift. This inspection will include: a visual inspection as well as a functional inspection.

This will include:

- All Decals are in place
- Engine Fluids at correct levels
- Electrical Components and Wiring
- Hydraulic Hoses, fittings and cylinders
- Fuel and Hydraulic Tanks
- Drives, turntable motors
- Boom extension and wear pads
- Tires and Wheels
- Engine and related components
- Limit switches, alarms, horns, back up beepers
- Nuts, bolts and other fasteners
- Platform rail and entry gate
- Cracks in welds and structural components
- Compartment covers in place and latched
- Platform and ground control operations
- Auxiliary power function

Perform any other inspection required by the manufacturers' specifications.

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Hydraulic Fluid Indicator



Tires and Components



Electrical Components



Railings, Fittings, Chains, Welds



Booms



Alarms, Horns, Backup Beepers

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Outriggers (If Applicable)



Operator Control Box (Scissor Lift)



Boom Type of Controls

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Pre-Operational Inspection – Operational

Prior to putting the equipment into service, ensure all equipment is functioning properly.

At the Ground Controls:

- Activate the Emergency Stop
- Activate Each Boom Function (If Applicable)
- Test Auxiliary Controls



At the Platform Controls:

- Activate Emergency Stop
- Test Horn
- Test Boom Functions (where applicable)
- Test Steering Functions
- Test Raising and Lowering of the Scissors
- Test Drive, Reverse, Starting and Stopping
- Test Auxiliary Controls
- In Reverse, Back Up Beepers
- Railings Secure, and Chains in Place

Worksheet # 4

Your Evaluation is based on hands on demonstration.

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Understanding the Hazards Driving the Aerial Lift

Learning Objectives:

By the end of this module the participant will be able to:

1. Understand the safety hazards associated with Aerial Lift Platforms.
2. Demonstrate safe operation of a Aerial Lift Platform.



It is imperative that "competent operators" understand the hazards.

In Groups identify the hazards that would pertain to Aerial Lift Platform Operators.

This image shows a full page of white paper with horizontal blue ruling lines. The lines are evenly spaced and run across the width of the page, providing a template for handwriting practice or general note-taking. There are no margins, text, or other markings on the page.

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Safety Hazards

Over Head Obstructions



Tip Overs



Climbing on Railings or other objects



Wear your Fall Protection Equipment

Electrocution Hazards Ground and Surfaces, Falls, Overhead Obstructions



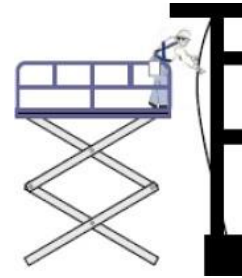
Rated Capacity, Side Loads



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No Ladders on Platform



No Side Loads (No Pushing or Pulling)



The Highest Point on the Platform is your head!

SAFE OPERATION

MOUNTING THE MACHINE

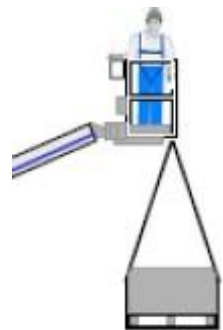
- Always use "three point contact"
- Clean shoes
- Never use controls as handles
- Never climb onto a moving machine
- Never climb an elevated machine
- Secure gates & chains before moving

Maintain three Point Contact



Do not go up in Gusty Wind Conditions

Platforms are not rated to lift or tow



DON'T EXCEED THE
MACHINE CAPACITY

of the
les:
only



Rated Capacity Means that it is capable of supporting the occupants and material, that must be within rated capacity. Evenly distributed on the platform. And remember no side load.

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The Aerial Platform

1. Always maintain three-point contact, getting on and off the machine.
2. Always complete pre-operational inspections prior to operating the machine for the day. (If more than one shift, prior to each shift)
3. Always, ensure you latch the chain.
4. Before you turn on the machine, make sure you have attached your fall protection equipment to the floor anchor. When you are not above 18.5 feet in height, travel restraint systems are required to be used. (A straight web lanyard, with no limiting device.)
5. Always face the direction of travel.
6. Assure that you have a clear, level surface to travel on and always consider structural integrity. Does not park or drive over drain covers or areas that the weight of the machine could affect the stability of the truck? Do not travel over debris or areas that could affect the stability of the machine. Watch hills and inclines, uneven surfaces etc.
7. Maintain a safe distance from obstacles, drop offs, uneven surfaces, debris, holes, depressions, holes, ramps, or other hazards for safe elevated travel.
8. Limit speed according to conditions.
9. Use caution when operating near slopes, personnel, other vehicles, that could create a collision.
10. Never participate in stunt driving or horseplay.
11. Operator should maintain a stable footing on the platform.
12. Steering is not self-centering and must be manually returned to centre line.
13. Travel only with the boom in the stowed position with the platform behind the drive wheels.
14. Do not rotate, extend, lower boom when travelling.
15. Remember your head is the highest point on the platform.
16. Maintain your load evenly distributed on the platform.

Aerial Lift- Scissor Lift Operator Safety

Refueling

General Safety Rules

- Follow company policies
- Observe safety rules
- Be authorized and trained to refuel



Refueling Gasoline and Diesel Machines

- Start the shift with a full tank
- Refuel only when the engine is cool
- Refuel in designated areas only
- No smoking, sparks, or flame during refueling
- Know where the fire extinguishers are and how to use them
- Turn off machine
- Use the correct type of fuel
- Clean up spills
- Do not top-off the fuel tank



Liquid Propane Characteristics

- LP is heavier than air
- LP is extremely flammable
- LP is extremely cold
- LP is odorless in its natural state

Liquid Propane Fueling Guidelines

- Do not refuel near confined area, elevator shafts or open pits
- Do not park the forklift / Aerial Lift or store fuel tank near
 - High heat sources
 - Stairways
 - Exits
 - Areas for safe egress
- Turn off service valve if machine is parked for long periods of time
- Do not roll, drag, or strike LP tanks
- Turn off service valves on all empty containers

Aerial Lift- Scissor Lift Operator Safety

Replacing LP Tanks

- Must be trained and authorized and follow company policy
- Wear protective clothing
- Replace tanks in designated area
- Park the aerial platform and:
 - Turn off service valve
 - Let fuel fun out of supply line
 - Attempt to restart engine
- Disconnect the fuel line and remove the LP Tank
- Check new tank for damage
- Tank must be compatible and fit within the confines of the vehicle
- Place tank in proper position
- Secure the tank with bracket restraints
- Open the service valve slowly. Too fast will cause back pressure check valve to close
- Check for leaks with soapy solution



Aerial Lift- Scissor Lift Operator Safety

Battery Care

Battery Size and its Effects

- Vehicle lifting capacity is directly affected the battery size
- Battery size effects vehicle stability
- Charge life
- Work cycle duration

What is an industrial Battery?

- Six or more cells connected in series
- Each cell contains a group of positive and negative plates
- Cells are submerged in solution of sulfuric acid and water known as electrolyte
- Each cell when fully charged equals 2.14 volts
- The battery voltage equals the number of cells times two

Battery Hazards

- Weight
- Acid
- Explosive fumes
- Electrical

If any body part becomes exposed to electrolyte immediately flush the affected part at the nearest eye wash station for 15 minutes. Then seek medical attention.

General Safety Rules

- Follow company policy
- Observe safety rules
- Be trained and authorized



Changing Batteries

- Change in designated areas only
- Use proper equipment when changing batteries
- Cover top of exposed terminals with plywood
- Use a hoist with enough capacity to lift the battery
- Wear protective equipment, face shield, safety glasses, rubber gloves and apron

Aerial Lift- Scissor Lift Operator Safety

Changing Batteries, Continued

- Clear route for removal of battery
- Install fully charged battery into the Aerial lift
- Secure battery with restraint system and latch hood

Changing Batteries

- Park the Aerial lift in the "unattended" mode
- Open battery compartment fully. This allows hydrogen gas to escape
- Connect battery to the compatible charger
- Check cable and connectors for damage
- Charge battery per manufacturer's instructions
- When complete, turn off charger first. If not done, a spark could be produced which may ignite the hydrogen gas released during the charging process.

Watering Batteries

- Always add water after charging
- Add water to a battery before charging only if the separator plate is uncovered. Then, only add enough water to cover plate.
- Use distilled or approved tap water
- Never attempt to add acid

Insuring Maximum Battery Life

- Discharge to battery manufacturer's recommended level: usually 80%
- Battery life is typically 1,500 to 2,000 cycles
- A cycle is one complete discharge and one complete charge
- Avoid quick, opportunity charges
- Follow the 8-8-8 rule, run 8 hours, charge 8 hours, cool 8 hours
- Do not overcharge a battery. Overcharging can:
 - Creates high temperature
 - Causes boil over
- Undercharging a battery can:
 - Cause the plates to become brittle
 - Shortens battery life

Aerial Lift Platform Examination

Name: _____ Date: _____

Company: _____

Aerial Lift Platform Examination

1. Whose responsibility is it to make sure that the person operating the aerial lift platform is trained?
 - a) The rental company
 - b) The owner of the equipment
 - c) The owner of the company
 - d) All of the above
2. The major reason aerial lift platform safety training is so important is:
 - a) It's the law
 - b) It protects the workers
 - c) It reduces the company's operating cost
 - d) All of the above
3. The number one cause of fatalities of aerial lift accidents is:
 - a) Tip over
 - b) Electrocution
 - c) Falls
 - d) Improper maintenance
4. Once you are trained you can operate any type of aerial lift:
 - a) True
 - b) False
5. For safe operation of the aerial lift, you should be:
 - a) Trained
 - b) Authorized
 - c) Qualified
 - d) All of the above
6. If you are taking prescription or over-the-counter drugs, you should:
 - a) Operate at a slower pace
 - b) Don't take them while you are operating
 - c) Obtain medical advice on whether it is ok to operate an aerial lift platform
 - d) Don't ask, don't tell

7. Aerial lift platforms are required to have all warning labels visible and legible.
 - a) True
 - b) False
8. The operation and Maintenance manual is to be on the machine at all times.
 - a) True
 - b) False
9. When, on a boom supported Aerial lift platform, is the operator required to use a harness and lanyard?
 - a) When moving the aerial lift platform from one end of the yard to the other
 - b) When maneuvering the machine for repairs
 - c) When operating at heights above 10 feet
 - d) The operator is always required to use a harness and lanyard
10. Before operating an aerial lift platform the operator must:
 - a) Do a pre-shift inspection
 - b) Be trained on that particular model
 - c) Have read and understood the operator's manual
 - d) All the read
11. Owners must keep records for at least 3 years of:
 - a) Names of persons trained to operate the aerial lift platform(s)
 - b) Frequent Inspections
 - c) Annual Inspections
 - d) All of the Above
12. If the aerial lift platform has an insulated boom, it must be dielectrically tested before using it near high voltage lines.
 - a) True
 - b) False
13. ANSI standards requires the aerial lift platform to be inspected:
 - a) Annually
 - b) At the start of the day or the beginning of a shift
 - c) Every three months or 150 hours
 - d) All of the above

14. Pre-operation inspections can:
- a) Improve safety
 - b) Reduce down time
 - c) Reduce cost
 - d) All of the above
15. When defects are noted during the pre-operation inspection, it is OK to continue to use the aerial lift platform until the job is completed.
- a) True
 - b) False
16. When checking for propane leaks it is best to:
- a) Use a soapy solution
 - b) Use a match or a lighter
 - c) Smell for leaks
 - d) All of the above
17. When checking for leaks in high pressure hoses, it is ok to use your bare hand as long as you wash it off immediately afterward.
- a) True
 - b) False
18. An under-inflated tire will reduce the stability of the machine.
- a) True
 - b) False
19. Tires are to be repaired only by an authorize person using the proper procedures and safety equipment.
- a) True
 - b) False
20. The rated capacity includes all weight added to the platform, including personnel, tools, equipment and materials and requires that it be evenly distributed on the platform.
- a) True
 - b) False
21. The anchorage point for the lanyard must be clearly marked so the railing is not used to do so.
- a) True
 - b) False

22. The boom should be checked for:
- a) Dents or creases
 - b) Worn Slide pads
 - c) Cracks
 - d) All of the above
23. If your machine becomes disabled or unsafe to operate you should:
- a) Not tell anyone, because you might get blamed.
 - b) Tell your supervisor and lockout the controls so no one else will use it.
 - c) Put a sign on the machine to not use it.
 - d) Try to fix it yourself so the machine is not out of service for a long time.
24. Ground controls should be checked each day to make sure the operator can be lowered down in case of an emergency.
- a) True
 - b) False
25. A functional test must include:
- a) Raising and lowering the platform.
 - b) Making sure brakes will hold.
 - c) Testing the emergency stop mechanism.
 - d) All of the above.
26. Modification or alteration to the aerial lift platform shall only be made with prior written approval of the manufacturer.
- a) True
 - b) False
27. When parts or components are replaced, they must be identical or equivalent to the original.
- a) True
 - b) False
28. Anytime the boom or platform is lifted or raised, the aerial lift platform becomes increasingly unstable.
- a) True
 - b) False
29. When elevated to the maximum height it is wise to rest the machine against an adjacent structure to maximize stability.
- a) True
 - b) False

30. It is ok to move the machine with the boom or mast extended as long as:
- a) You are only going a short distance.
 - b) It is rated by the manufacturer to do so at that elevation.
 - c) You don't make any sudden turns or stops.
 - d) You are on a flat and smooth surface.
31. When parking your aerial lift, it is important that:
- a) You plug it into the charger each time so that you have a full charge.
 - b) Keep the key in it so someone else can move it if it is in the way.
 - c) The controls are neutralized, the platform lowered to the ground, the machine turned off and key removed.
 - d) If be easily accessible.
32. The capacity of the machine should be clearly visible to anyone who enters the machine.
- a) True
 - b) False
33. When steering the aerial lift platform around a blind corner, you should:
- (a) Lean out to see around the corner.
 - (b) Slow down and sound horn.
 - (c) Make the sharpest turn you can.
 - (d) All the above.
34. When operating an aerial lift platform around pedestrians, it is:
- a) The pedestrian's responsibility to watch out for you.
 - b) Your responsibility to watch out for the pedestrians out of the work area.
 - c) Management's responsible to keep pedestrians out of the work area.
 - d) All of the above
35. If your aerial lift platform becomes inoperable while you are in the air, you should:
- a) Climb down the mast or boom and use the ground controls to lower it.
 - b) Have someone who knows how to use the ground controls to lower you down.
 - c) Jiggle the wires that lead to the controls.
 - d) Call 911 on your cell phone.
36. If some of the controls are not labeled, wait until you actually need them to find out what they do.
- a) True
 - b) False

37. Controls that stick in one position are useful to prevent your hand from getting tired holding them in position while operating.
- a) True
 - b) False
38. If some of the controls don't do what they are supposed to, it is still ok to use them as long as you post a sign informing the operator which ones they are.
- a) True
 - b) False
39. On boom supported aerial lift platform, erratic booming or swinging has no effect on the stability of the machine as long as you stay within its rated capacity.
- a) True
 - b) False
40. A good time to check the worksite for hazards is when you are boomed up high so you can see them better.
- a) True
 - b) False
41. When lowering the platform, it is good practice to look below to see if the path is clear.
- a) True
 - b) False
42. If your boom is insulated, you don't have to worry about high voltage lines.
- a) True
 - b) False
43. On machines that have foot pedals, it is ok to jerry-rig them down as long as you remember to remove it when you are done.
- a) True
 - b) False
44. If you come into contact with electrical lines, you should:
- a) Warn everyone around the machine to keep clear.
 - b) Have someone call 911.
 - c) Stay put and only leave the machine if you have to.
 - d) All of the above.

45. If you see an operator that has come into contact with an electrical line and he is unconscious, you should:
- a) Get a long piece of lumber and try to remove the line from the machine.
 - b) Use the ground controls to lower or move the machine away from the lines.
 - c) Call 911 and warn others to stay away from the machine until the lines are de-energized.
 - d) Throw an object at the operator to try and wake him up.
46. When traveling with the platform raised, the operator shall:
- a) Maintain a clear view of the path of travel.
 - b) Maintain a safe distance from overhead obstacles.
 - c) Stay away from debris, holes, depressions, slopes and other hazards to travel.
 - d) All of the above.
47. It is ok to use an aerial platform like a crane as long as you don't exceed the maximum capacity of the machine.
- a) True
 - b) False
48. It is ok to enter the machine while it is elevated if you use an approved ladder.
- a) True
 - b) False
49. When refueling an aerial lift, you should:
- a) Follow company policy.
 - b) Never smoke.
 - c) Shut off the engine.
 - d) All of the above.
50. LP tanks can be replaced in confined spaces.
- a) True
 - b) False
51. What happens if the service valve on an LP tank is opened to quickly?
- a) The fuel supply line could burst.
 - b) The back pressure check valve will close.
 - c) The engine will not restart.
 - d) The fuel supply valve will freeze open.
52. LP fuel is lighter than air.
- a) True
 - b) False

53. When fueling a gasoline or diesel aerial platform, always fill the tank completely full.
- a) True
 - b) False
54. When parking a LP powered aerial platform overnight, always:
- a) Shut off the service valve.
 - b) Avoid high heat sources.
 - c) Avoid parking in confined spaces.
 - d) All of the above.
55. After installing the LP fuel tank, it is best to check the connection with a soapy solution.
- a) True
 - b) False
56. What is the explosive gas generated by batteries when charging?
- a) Oxygen
 - b) Nitrogen
 - c) Hydrogen
 - d) Potassium
57. Personal protective equipment should be worn when handling batteries.
- a) True
 - b) False
58. You must be trained and authorized to charge a battery.
- a) True
 - b) False
59. Normally, you should only add water to a battery:
- a) Before charging
 - b) During charging
 - c) After charging
 - d) It doesn't matter when you add the water
60. If you are exposed to electrolyte, the first thing you need to do is:
- a) Seek medical attention immediately.
 - b) Wait until the shift is over.
 - c) Go to the nearest eye wash station and flush the affected area.
 - d) None of the above.

Please complete the training feedback form.

Thank-You

Training Course Feedback Form

Course: _____ Course Date: _____

Instructor: _____ Company: _____

Rating: 1 = Very Poor 5 = Very Good

Administration

Category	Rating				
Course was scheduled at a good time	1	2	3	4	5
Course started on time	1	2	3	4	5
Course finished on time	1	2	3	4	5
Trainer took periodic breaks	1	2	3	4	5

Course Content

Category	Rating				
Course workbook was easy to understand	1	2	3	4	5
Course workbook was informative	1	2	3	4	5
Presentation was easy to understand	1	2	3	4	5
Presentation was informative	1	2	3	4	5

Instructor

Category	Rating				
Instructor presented material in ways that were easy to understand	1	2	3	4	5
Instructor answered questions clearly	1	2	3	4	5
Instructor encouraged active participation	1	2	3	4	5

Technology

Category	Rating				
I could clearly hear what the instructor was saying	1	2	3	4	5
I could clearly see what the instructor was doing	1	2	3	4	5
The technology was beneficial to the learning process, not a hindrance	1	2	3	4	5

**** Overall, This was a positive experience: 1 2 3 4 5**

Comments: _____
