ORDER

U. S. Department of Transportation
Federal Aviation Administration
SOUTHERN REGION

SO 3900.28

6/3/02

SUBJ: SOUTHERN REGION FALL PROTECTION PROGRAM

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1. PURPOSE. The Federal Aviation Administration, Southern Region, seeks to prevent accidents in the workplace by developing employee awareness and training on workplace safety. The Fall Protection Program (FPP), as required by 29 CFR 1910.21, 1910.66, 1910.268 and 1926.500-503 is designed to enable employees to maintain safe walking and working surfaces.

2. DISTRIBUTION. This order is distributed to the division level in the Southern Region, to the section level in the regional Airway Facilities Division, NAS Implementation Center (ANI), and to all Airway Facilities Field Offices.

3. DEFINITIONS.

a. Body Belt (safety belt) - a strap with means both for securing it about the waist and for attaching it to a lanyard, lifeline, or deceleration device. The body belt is no longer acceptable as a fall protection device by the FAA unless approved by the Regional Occupational Safety and Health Manager (ROSHM).

b. Belt, (Lineman's Belt) - a belt similar to a body belt with exception of its attachment points. A lineman's belt has its tow D-Rings on either side of the belt so that a lineman's strap can be attached to them. The lineman's strap is usually placed around a structure (pole) to position the worker around the structure (pole) or assist during the climb.

c. Body Harness - a design of straps that may be secured about the employee in a manner that will distribute the fall arrest forces to the thighs, pelvis, waist, chest and shoulders with means for attaching it to other components of a personal fall arrest system.

d. Buckle - any device for holding the body harness closed around the employee's body.

e. Competent Person - a person who, because of training and experience, is capable of identifying hazardous conditions and is capable of training employees to identify such conditions.

f. Connector - a device that is used to couple (connect) parts of the personal fall arrest system and position the device systems together. It may be an independent component of the system such as a carabiner, or it may be an integral component of part of the system (such as a buckle or D-ring sewn into a body harness, or a snap-hook spliced or sewn into a lanyard or self-retracting lanyard).

g. Controlled Access Zone (CAZ) - an area in which specific types of construction work (e.g.: overhand brick laying) may take place without the use of guardrail systems, personal fall arrest system, or safety net system. Access to the CAZ is controlled, only trained and authorized employees can enter.

h. Deceleration Device - any mechanism, such as a rope grab, rip-stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic lanyards, etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

i. Deceleration Distance - the additional vertical distance a falling employee travels, excluding lifeline elongation and free fall distance, before stopping, from the point at which the deceleration device begins to operate. It is measured as the distance between the location of an employee's body harness attachment point at the moment of activation (at the onset of fall arresting forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

j. Equivalent - alternative designs, materials, or methods to protect against a hazard, which the employer can demonstrate, will provide an equal or greater degree of safety for employees than the methods, materials or designs specified in the standard.

k. Fall Restraint System - a lanyard or device that is designed to restrain a worker in order to prevent a fall from occurring.

l. Free-Fall - the act of falling before a personal fall arrest system begins to apply force to arrest the fall.

m. Free Fall Distance - the vertical displacement of the fall arrest attachment point on the employee's body harness between onset of the fall and just before the system begins to apply force to arrest the fall. The distance excludes deceleration distance and lifeline/lanyard elongation but includes any deceleration device slide distance or self-retracting lifeline/lanyard extension before they operate and fall arrest forces occur.

n. Guardrail System - a barrier erected to prevent employees from falling to lower levels.

o. High Risk Task - a task which would require the climber to detach from a ladder safety system, climbing without a ladder safety system, work from a platform without guardrails, or other factors that would compromise the safety of the climber, such as long duration, temperature factors, etc.

p. Hole - a gap or void 2 inches or more in its least dimension in a floor, roof or other walking/working surface.

q. Horizontal Lifeline - a component consisting of a flexible line for connection to anchorages at both ends to stretch horizontally and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

r. Ladder Safety System - an assembly of components whose function is to arrest the fall of a user, including the carrier and its associated attachment elements (brackets, fasteners, etc.), safety sleeve, body support and connectors, wherein the carrier is permanently attached to the climbing face of the ladder or immediately adjacent to the structure.

s. Lanyard - a flexible line of rope, wire rope, or strap that generally has a connector at each end for connecting the body harness to a deceleration device, lifeline or anchorage.

t. Leading Edge - the edge of a floor, roof, or formwork for a floor or other walking/working surface (such as the deck), which changes locations as additional floor, roof, decking or formwork sections are placed, formed or constructed. A leading edge is considered to be an "unprotected side and edge" during periods when it is not actively and continuously under construction.

u. Lifeline - a component consisting of a flexible line for connection to an anchorage at one end to hang vertically (vertical lifeline) or for connection to anchorages at both ends to stretch horizontally (horizontal lifeline) and which serves as a means for connecting other components of a personal fall arrest system to the anchorage.

v. Low Risk Task - a task where the climber remains attached to the ladder safety system or works from a platform with guardrails.

w. Lower Levels - those areas or surfaces to which an employee can fall. Such areas or surfaces include, but are not limited to, ground levels, floors, platforms, ramps, runways, excavation pits, tanks, material, water, equipment, structures, or portions thereof.

x. Personal Fall Arrest System - a system used to arrest an employee in a fall from a working level. It consists of an anchorage, connectors, and a body harness and may include a lanyard, deceleration device, lifeline, or suitable combinations of these.

Note: The Southern Region prohibits the use of a body belt for fall arrest without prior approval by the Regional Occupational Safety and Health Manager.

y. Positioning Device System - a body harness system rigged to allow an employee to be supported on an elevated vertical surface, such as a wall, and work with both hands free while leaning.

z. Qualified Person - an individual with a recognized degree or professional certificate and extensive knowledge and experience in the subject field, who is capable of design, analysis, evaluation, and specifications in the subject work, project, or product (e.g. structural engineers, designers). This person must be an Expert Climber if job duties require climbing.

aa. Rope Grab - a deceleration device, which travels on a lifeline and automatically, by friction, engages the lifeline and locks to arrest the fall of an employee. A rope grab usually employs the principle of inertial locking, cam/level locking, or both.

bb. Safety Monitoring System - a safety system in which a Competent Person is responsible for recognizing and warning employees of fall hazards.

cc. Self Rescue - the act of freeing oneself and descending safely to the ground following a slip or a fall from a ladder or an elevated work surface.

dd. Self -Retracting Lifeline - a deceleration device containing a drum wound line, which can be slowly extracted from, or retracted onto, the drum under slight tension during normal employee movement, and which, after onset of a fall, automatically locks the drum and arrests the fall.

ee. Snaphook - a connector comprised of a hook-shaped member with a normally closed keeper, or similar arrangement, which may be opened to permit the hook to receive an object and, when released, automatically closes to retain the object. Snaphooks are generally one of two types:

(1) The locking type with a self-closing self-locking keeper which remains closed until unlocked and pressed open for connection or disconnection; or

(2) The non-locking type with a self-closing keeper that remains closed until pressed open for connection or disconnection.

Note: The use of non-locking snaphooks as part of the personal fall arrest systems and positioning device systems is prohibited.

ff. Walking/Working Surface - any surface, whether horizontal or vertical, on which an employee walks or works, including, but not limited to, floors, roofs, ramps, bridges, runways, formwork and concrete reinforcing steel but not including ladders, vehicles or trailers on which employees must be located in order to perform their job duties.

gg. Warning Line System - a barrier erected on a roof to warn employees that they are approaching an unprotected roof side or edge, and which designates an area in which roofing work may take place without the use of guardrail, body belt, or safety net systems to protect employees in the area.

hh. Work Area - that portion of a walking/working surface where job duties are being performed.

ii. Working Height - the distance from the walking/working surface to a grade or lower level.

4. POLICY. It is the Southern Region policy that employees comply with the Fall Protection Program as part of an accident prevention program. This guidance represents the minimum requirements for the Fall Protection Program. Site-specific requirements may be more stringent based upon local risk assessments.

5. REGULATORY STANDARDS. Fall protection standards are outlined in both General Industry and Construction Standards. Federal regulations governing fall protection are numerous, and are outlined in Appendix I.

a. General Industry requirements for fall protection include:

(1) 29 CFR 1910.23, Working Surfaces

(2) 29 CFR 1910.27, Fixed Ladders

(3) 29 CFR 1910.67, Articulating Work Platforms

(4) 29 CFR 1910.268, Telecommunications

b. Construction industry requirements for fall protection include:

(1) 29 CFR 1926.500, Scope and Application

(2) 29 CFR 1926.501, Employers Duty to Provide Fall Protection

(3) 29 CFR 1926.502, Fall Protection Systems Criteria and Practices

(4) 29 CFR 1926.503, Training Requirements

6. SCOPE AND APPLICATION. This Fall Protection Program applies to personnel performing work for the FAA at all elevated work sites and where hazards may exist on walking/working surfaces or areas used as access areas to working surfaces.

7. RESPONSIBILITIES.

a. Regional Occupational Safety and Health Manager (ROSHM) is responsible for:

(1) Implementing and managing the Fall Protection Program for the region.

(2) Ensuring the Fall Protection Program meets all applicable regulatory requirements.

(3) Serving as the focal point to analyze, evaluate and resolve all fall hazards.

(4) Resolving all unsafe condition complaints regarding fall protection.

(5) Maintaining state of the art knowledge on available fall protection equipment to facilitate evaluating, recommending, and purchasing of appropriate equipment.

(6) Coordinating, developing, and identifying appropriate training materials and courses.

(7) Directing the integration of Fall Protection Program issues throughout the region and oordinating abatements with headquarters offices for agency wide hazards.

(8) Facilitating routine inspections and audits of Fall Protection Program activities.

b. SMO Managers shall:

(1) Ensure implementation and compliance of the Fall Protection Program throughout the SMO.

(2) Ensure that fall protection requirements are identified during project reviews conducted by the SMO.

c. Safety and Environmental Compliance Manager (SECM), and ANI Environmental and Occupational Safety and Health (EOSH) Coordinator are responsible for:

(1) Serving as designated single point of contact for fall protection activities.

(2) Coordinating appropriate fall protection training for all employees.

(3) Approving purchases of all fall protection equipment.

(4) Render assistance with development of local procedures.

d. SSC Supervisors/ANI Platform Managers/ FMP Supervisors are responsible for:

(1) Implementing a Fall Protection Program at all facilities occupied and/or maintained by Airway 'acilities (AF) where fall protection considerations have been identified or assumed.

(2) Identify and develop an inventory of elevated work platforms, ladders, and scaffolding that require climbing.

(3) Identify all locations that require site-specific plans.

(4) Ensure employees who climb and utilize fall protection equipment have received the appropriate level of training.

(5) Ensure that employees wear the assigned climbing and fall protection equipment when required.

(6) Ensure that climbing and fall protection equipment is properly used, maintained, and inspected prior to each use, and undergo a complete annual inspection per manufacturer's requirements.

(7) Informing the Competent Person of all non-routine climbs requiring site specific planning.

(8) Report when any equipment is impacted by a fall in accordance with accident reporting requirements in FAA Order 3900.19B.

e. Employees are responsible for:

(1) Notifying their supervisor when performing non-routine tasks on elevated work platforms, ladders, or scaffolds.

(2) Wearing the appropriate fall protection equipment properly whenever required.

(3) Inspecting and maintaining fall protection equipment.

(4) Recording inspection and maintenance activities.

(5) Notifying the supervisor whenever fall protection equipment becomes defective.

(6) Notifying the supervisor whenever fall protection equipment is impacted by a fall.

(7) Assessing their physical capability of safely climbing the day of the task.

8. PROGRAM REQUIREMENTS.

a. Hierarchy of Fall Protection Controls - Personnel will consider the following controls, in order, when selecting fall protection.

(1) Eliminating hazards through alternatives that do not require an employee to climb

(2) Preventing fall hazards through the use of fall restraint including guardrails, handrails, physical barriers, covers and perimeter cables.

(3) Arresting falls using conventional fall protection including horizontal lifelines, self-retracting lifelines and lanyards, safety nets, and personal fall arrest systems. The rigid rail ladder safety systems are the primary type of fall protection system used in the Southern Region because they are the best for impacting the climber the least. Specifically the climbing sleeve arrests a fall within 6 inches.

(4) Controlling the hazard through administrative techniques such as warning lines, safety monitors, and controlled

b. Employee Training.

CATEGORY	DUTIES	PREREQUISITES	COURSE #
Qualified Climber: Is a person who performs any of the duties specified for this category and has successfully completed the Qualified Climber training.	Climbs structures that are 50 feet or less in height Structures meet OSHA standards Maintenance tasks performed Climber always protected by attachment to ladder safety system or guardrail.	Physically capable	97417
Expert Climber: Is a person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Expert Climber training. **Note**: He/she may also be assigned duties specified for the Qualified Climber.	Maintenance tasks performed Climbs structures more than 50 feet in height Structure may not meet OSHA standards Structure that are not equipped with a ladder safety system Performs activities that requires climber to detach from ladder safety system Conducts basic elevated work surface inspections, if job duties require	Physically capable	97504
ompetent Person: Is a person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Competent Person training. He/she may also be assigned duties specified for the Qualified and/or Expert Climber categories.	Provides program oversight, if job duties require Selects equipment and systems, if job duties require Inspects fall protection equipment and systems, if job duties require Heavy exposure to falls; majority of work performed at heights, if job duties require	Physically capable Has success-fully completed Expert Climber training, if job duties require climbing	97491
Qualified Person: Is a person who performs any of the duties specified for this category. Then, after meeting the prerequisites identified, has successfully completed Qualified Person training. He/she may also be assigned duties specified for the Qualified Climber and/or Expert Climber and/or Competent Person categories.	May have program oversight, if FAA employee Degreed (i.e., structural or equivalent engineering degree), or holds professional certification in fall protection related disciplines Extensive knowledge in fall protection Capable of design, analysis, and evaluation Develops specifications related to work on elevated surfaces and the associated fall protection systems	Physically capable Has success-fully completed Expert Climber training, if job duties require climbing Has success-fully completed Competent Person training	Commercially available

c. Refresher training will be conducted whenever:

(1) Job duties change.

(2) Changes in the workplace render previous training obsolete.

(3) Changes in the types of fall protection systems or equipment used will render previous training obsolete.

(4) Whenever evaluation determines inadequacies in the employee's knowledge.

d. Physical Capabilities.

(1) Pending national guidance, all climbers shall conduct a self-assessment as to their fitness to climb. Employees can refuse to climb for any medical reason.

e. Fall Protection Equipment. Personal fall protection equipment will be provided to the employees at no cost. All fall protection equipment should meet ANSI standard Z359.1. All equipment used for work positioning should meet ANSI Z359.1 or A10.14 standards.

(1) Equipment may consist of the following (Sample PPE Assessment in Appendix H):

(a) Basic

1) Body Harness – A standard body harness and lanyard is designed to support a maximum combined weight (person and equipment) of up to 310 pounds.

2) Helmet, with a chinstrap with a minimum of 3 connection points to the helmet.

(b) Additional based on structure and task

1) Shock absorbing lanyards

2) Tie Off Adapter

3) Work Positioning Lanyard

4) 100% Tie-Off Lanyards

5) Connectors and/or Carabiners

(2) Competent persons shall approve all fall protection equipment purchases. Fall protection equipment must be used in accordance with manufacturer's guidelines and general fall protection principles.

(3) SECM, ROSHM, or ANI EOSH Coordinator must approve the use of self-retracting lifelines/lanyards and rope grabs for specific applications.

(4) Contractors must provide their own fall protection equipment for all FAA contracted work.

f. Fall Protection Plan.

(1) The SECM and ANI EOSH Coordinator will:

(a) Conduct an inventory of all elevated work surfaces.

(b) Identify existing and potential hazards associated with each elevated work surfaces.

(c) Utilize the hierarchy of fall protection controls to minimize hazards associated with elevated work surfaces.

(d) Identify fall protection procedures for all non-routine tasks.

(e) Utilize a Qualified Person for modifications or installations of fall protection equipment.

(2) Standard Fall Protection Procedures.

(a) OSHA has standards that cover general industry, construction, and scaffolding activities with four, six, and ten-foot limits, respectively. The appropriate standards should be used based upon the task performed.

(b) Employees working on a roof closer than six feet from the edge shall be protected from falling by permanent guardrails, or a Competent Person must approve any alternative system listed below.

1) Personal fall arrest system

2) Warning line system

3) A safety monitoring system for roofs 50 feet or less in width

(c) Employees shall be protected from floor holes, floor openings, manholes, vaults, and pits by use of portable guardrail systems or covers.

(d) Personnel may climb alone if **all** of the following conditions are met:

1) they are Expert Climber trained when the climb is less than 100 feet or Qualified Climber trained when the climb is less than 50 feet, **and**

2) they are performing a low-risk task, **and**

3) the facility has a ladder safety system with proper safety sleeve, **and**

4) the climber will not disconnect from ladder safety system unless within a guarded platform; **and**

5) the climber has proper fall protection equipment, including helmet, **and**

6) the climber has an operational radio or cell phone; **and**

7) rescue can be summoned within 15-30 minutes.

(e) Two person climbing is required whenever **any** of the following conditions exist:

1) performing high risk task, **or**

2) climbing over 100 feet, **or**

3) a ladder safety system is not available, e.g. rigid rail or cable; **or**

4) summoning rescue requires a standard telephone, (e.g. landline phone) **or**

5) rescue is not available within 15-30 minutes; **or**

6) disconnecting from ladder safety system to accomplish task.

(f) When performing climbs requiring two persons the following is required:

1) person climbing must be appropriately trained, and

2) the climber has proper fall protection equipment, and

3) positive communication means must be available to summon rescue, i.e. standard telephone, cell phone, or radio; and

4) positive communication means must be available between climber and observer; and

5) individual rescue plans for the specific high-risk activity.

(g) Non-routine Climbing Procedures

1) Any non-routine climbing activities must be evaluated and site-specific procedures approved by a Competent Person.

2) Each SSC Supervisor, FMP Supervisor, and ANI Platform Manager must identify high-risk tasks or any task performed at height that presents a hazard or unique risk to an employee. Site-specific plan must be developed to reduce risk to an acceptable level. Assistance is available through the SECM, ANI EOSH Coordinator, Competent Persons, or regional safety staff.

(h) Ladder Use - Fixed Ladders

1) All personnel should use fixed ladder if present on the structure.

2) All fixed ladders over 20 feet shall have a ladder safety system.

3) All newly installed fixed ladders must be constructed in accordance with the Southern Region drawings for fixed ladders, SO-D-103159 LD1 through LD9.

4) Cable devices are prohibited unless approved by the ROSHM.

5) All fixed ladders must be maintained in a safe condition and inspected annually.

(i) Aerial Lifts Standard Operating Procedure – See Appendix A

(j) Manbasket Personnel Lifts Standard Operating Procedure – See Appendix B

(k) Pole Climbing Standard Operating Procedure – See Appendix C

(l) Scaffolding Standard Operating Procedure – See Appendix D

g. Emergency Rescue.

(1) Each SSC Supervisor/ANI Platform Manager shall ensure that a rescue plan is available for all facilities requiring climbing. Safe climbing guidelines are available in Appendix G.

(2) OSHA requires that "the employer shall provide for the prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves."

(3) Rescue Hierarchy:

(a) Self-Rescue – Performing Self-Rescue is the primary method for a fallen climber to descend a structure. If the work activity or the structure allows you to maintain hand or foot contact, then self-rescue is the recommended option. Self-rescue involves grabbing onto any part of the tower, repositioning yourself, and climbing down.

(b) Assisted Self-Rescue – A second person will assist the climber by pulling them back to the fixed ladder or structure so he/she can recover and climb down. Additional options include using portable ladders, platforms, aerial lifts, smelling salts, first aid, or other methods.

(c) Emergency Service/Attendant Rescue – Summoning Emergency Services (911 if available or fire department number) to rescue climber. In many cases the local fire department provides rescue services. This option is available for work in which self-rescue is not an option and the facility is located within 15-30 minutes from emergency rescue services. If selecting this option, prior coordination with rescue fire department is required. A sample letter is available in Appendix F.

(d) On Site Rescue – If self-rescue and summoning emergency services are not feasible, implement a site-specific rescue plan. This may include stand-by rescue services for high-risk tasks or using pre-packaged rescue kits. A Sample Site Specific Rescue Plan and a Sample Basic Rescue Plan are available in Appendix E.

h. Equipment Inspections and Maintenance. There are many variables, which affect the life of fall protection equipment, such as frequency and condition of use, exposures, sunlight, chemicals, abrasion, welding, paints, normal wear and tear and storage. The maximum life expectancy of synthetic fall protection equipment such as harness, lanyards, etc. is ten years. A Competent Person will determine if the equipment should be replaced earlier.

(1) All equipment should meet ANSI or NFPA standards, or be approved by a Competent Person.

(2) All equipment shall be inspected before each use for wear, damage, and other deterioration.

(3) All personal fall arrest systems and climbing equipment shall be inspected annually by another Qualified Climber, Expert Climber, or Competent Person. Fall protection equipment preventative maintenance tasks are available in Maintenance Management System (MMS) database.

(4) All personal fall arrest systems and ladder safety systems shall be maintained in good operating condition in accordance with manufacturers specifications and applicable preventative maintenance tasks.

(5) Self-Retracting Lanyard/Lifelines (SRLs) must be sent to manufacturer for factory recertification at periodic intervals designated by the manufacturer.

(6) Defective equipment shall be immediately taken out of service and replaced.

(7) All structures that require the use of fall protection equipment shall be inspected according to FAA Order 6930.25 Maintenance of Structure and Buildings and FAA Order 6950.18 Maintenance of Electrical Distribution Systems (wood poles).

i. Equipment Modifications.

(1) A Qualified Person shall conduct an engineering assessment of an elevated work surface that is to be modified.

(2) A Qualified Person shall evaluate all modifications of fall arrest systems to ensure that it performs as intended.

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APPENDIX 1. STANDARD OPERATING PROCEDURES FOR AERIAL LIFTS, SCISSOR LIFTS, AND BUCKET TRUCKS

Manlifts and Bucket Truck:

This Standard Operating Procedure (SOP) provides guidance for the safe operation of manlifts, bucket trucks and other personnel lifts and these procedures should be followed whenever operating these types of equipment. Manbaskets are addressed in a separate SOP. The procedures are divided according to pre-operation inspection, work site evaluation, and safe work practices.

All personnel shall receive appropriate training on the operation of the equipment prior to operating the equipment.

EQUIPMENT: Aerial Lifts, Manlift, Scissor Lift, and Bucket Truck

Personal Protective Equipment (PPE) based on task:

1. Fall Restraint System with appropriately sized lanyard.
2. Eye protection – safety glasses if there are any impact hazards, such as flying debris.
3. Hand protection – gloves specific to job task.
4. Safety shoes.
5. Head Protection – Hardhat.
6. Hearing protection.

Tools and Supplies that are normally required:

1. Chocks.
2. Tire Gauge.
3. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.).
4. Pulley system.
5. Mechanical fluids.
6. Tools needed for task.
7. Radios, for communication between personnel.
8. Operator Manual
9. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not climb guardrails.
2. Do not use additional ladders, planks, or other materials, within the platform, to achieve additional height.
3. Do not come within 15 feet of electrical lines (basket is not insulated).
4. Do not put any part of the body outside the platform while raising and lowering.
5. Do not operate lift until outriggers, when present, are extended properly.
6. Do not operate in inclement weather, such as high winds, ice, snow, etc.
7. Do not operate a damaged unit.
8. Do not rely on hour meter for maintenance schedule.
9. Do not travel with boom too high as it can make the lift unstable.
10. Do not exceed maximum weight capacities for the lift. Signs with the maximum rated weightlimits must be located on the equipment in obvious places where workers easily see them.

11. Do not exceed the manufacturer's occupancy limit for the basket or platform.
12. Do not drive lift unless worker is facing direction of travel.
13. Do not throw objects to or from the platform. Use a pulley and rope to raise and lower objects.
14. Do not work at height without properly attaching fall Restraint system to anchor point.
15. Do not tie fall restraint system onto an adjacent pole when working.
16. Do not use a lanyard other than the one specifically designed for use with the systems.

METHODOLOGY: The following procedures must be followed, as listed, prior to and during manlift, scissor lift, and bucket truck use:

Pre Operation Inspection:

1. Check all tires for leaks and for correct tire pressure
2. Check fuel, coolant, hydraulic fluid, and battery levels.
3. Inspect battery cables and connections for signs of damage.
4. Ensure the safe limit switch is operating properly.
5. Check all other connections for tightness and fitting.
6. Inspect pivot pins for signs of wear or damage and for security of locking device.
7. Inspect weld seams for cracks and aberrations, including attachment welds between activating cylinders and boom or pedestal.
8. Check guard rails for signs of wear or damage.
9. Inspect fall restraint anchor point for cracks or abnormalities in the welds or bolts.
10. Inspect fall restraint harness and lanyard according to fall protection program and training.
11. Conduct trial lifts with work platform empty and check for fluid leaks, abnormaloperation, and unusual noises.

NOTE: Do not use unit if any part is defective.

Work Site Evaluation

1. Identify overhead lines and verify that a safe approach distance can be maintained.
2. Evaluate terrain and slope for area where manlift will be located.
3. Check surfaces for hazards such as: buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. Verify that the lift has a safe approach distance from electrical lines. Keep a minimum of 15 feet of distance from energized parts, with 35 feet of distance recommended.
3. Verify outriggers will be on stable ground.
4. Conduct another trial lift with platform empty.
5. In accordance with the facility's Lockout/Tagout Program, de-energize and lockout any equipment that will be worked on during the lift.
6. Properly don a fall restraint system and attach lanyard to identified fall restraint anchor point. Maintain attachment entire time lift is at height.
7. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
8. Prior to repositioning the vehicle, always lower the lift.
9. Verify that any workers in the vicinity of the lift don a hardhat.
10. Conduct annual safety inspection according to manufacturer's recommendations.

APPENDIX 2. STANDARD OPERATING PROCEDURES FOR MANBASKETS

Manbaskets:

This Standard Operating Procedure (SOP) provides guidance for the safe operation of manbasket personnel lifts and these procedures should be followed whenever operating these types of equipment. The procedures are divided according to pre-operation inspection, work site evaluation, and safe work practices.

EQUIPMENT: Manbasket and Crane

Personal Protective Equipment (PPE) based on task:

1. Fall Restraint System with appropriately sized lanyard.
2. Eye protection – safety glasses if there are any impact hazards, such as flying debris.
3. Hand protection – gloves specific to job task.
4. Safety shoes.
5. Head Protection – Hardhat.
6. Hearing protection.

Tools and Supplies that are normally required:

1. Materials to cordon off area (e.g. caution tape, safety cones, work zone signs, etc.).
2. Pulley system.
3. Mechanical fluids.
4. Tools needed for task.
5. Radios, for communication between personnel.
6. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not use additional ladders, planks, or other materials, within the platform, to achieve additional height.
2. Do not put any part of the body outside the manbasket while raising and lowering.
3. Do not climb guardrails, if present.
4. Do not operate lift unless crane outriggers are properly deployed.
5. Do not come within 15 feet of electrical lines (basket is not insulated).
6. Do not operate in inclement weather.
7. Do not operate a damaged unit.
8. Do not exceed maximum weight capacities for the crane or for the manbasket. Signs with the maximum rated weight limits must be located on the equipment.
9. Do not exceed the manufacturer's occupancy limit for the basket or platform.
10. Do not throw objects to or from the platform. Use a pulley and rope to raise and lower objects.
11. Do not work at height without properly attaching fall restraint system to anchor point.
12. Do not tie fall restraint system onto an adjacent pole when working.
13. Do not use a fall restraint lanyard that is longer than the length needed to maneuver within the platform.
14. Do not use a lanyard other than the one specifically designed for use with the systems.
15. Do not hoist employees while the crane is traveling.
16. Do not use the crane's other loadlines while personnel are suspended in manbasket.

METHODOLOGY: The following procedures must be followed, as listed, prior to and during manbasket use:

General Preparation:

1. Meet with crane operator and verify inspection reports, including wire ropes, crane arm, hook, load tests, and the pre-operation maintenance tasks are current.
2. Verify the crane operator understands the job task.
3. Verify crane operator has been properly trained.
4. Verify signals and communication issues or concerns with crane operator.
5. Verify that if the operator has connected the personnel platform to the load line using a wire rope bridle, that each bridle leg is connected to a master link or shackle in such a manner to ensure that the load is evenly divided among bridle legs.
6. Verify the manbasket weight and rated capacities are not exceeded.
7. Visually inspect manbasket for signs of wear and damage.
8. Verify that manbasket provides adequate protection such as guardrails or complete enclosure.
9. Verify location of anchor point is on the lower load block, overhaul ball, or is on a structural member within platform that is capable of supporting a fall impact for employees.
10. Verify that hooks on overhaul ball assemblies, lower load blocks, or other attachment assemblies are of a type that can be closed and locked. An alloy anchor type shackle with a bolt, nut, and retaining pin can by used as the only alternative to the above setup.
11. Inspect fall restraint anchor point for cracks or abnormalities in the welds or bolts.
12. Inspect fall restraint harness and lanyard according to fall protection program and training.
13. Conduct a trial lift with the unoccupied personnel platform loaded at least to the anticipated lift weight from ground level. This must be performed prior to placing personnel on platform. Anytime the crane is moved and reset another trial lift must be performed. Check for fluid leaks, abnormal operation, and unusual noises during the trial lifts.

NOTE: Do not use unit if any part is defective.

Work Site Evaluation

1. Identify overhead lines and verify that a safe approach distance can be maintained.
2. Evaluate terrain and slope for area where manlift will be located.
3. Check surfaces for hazards such as: buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. In accordance with the facility's Lockout/Tagout Program, de-energize and lockout any equipment that will be worked on during the lift.
3. Verify that the unit has a safe approach distance from electrical lines. Keep a minimum of 15 feet of distance from energized parts, with 35 feet of distance recommended.
4. Verify outriggers will be on stable ground.
5. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
6. Secure materials and tools for use during lift to prevent displacement.
7. Properly don a fall restraint system and attach lanyard to the identified fall restraint anchor point. Maintain attachment the entire time manbasket is at height.
8. Always enter the manbasket while it on the ground.
9. Crane operator must remain in cab whenever a worker in the manbasket is at height.
10. Crane operator must maintain a clear line of sight to worker in the manbasket. If this cannot be accomplished another worker must be utilized to provide signals from ground.
11. Verify that any workers in the vicinity of the crane or manbasket don a hardhat.

APPENDIX 3. STANDARD OPERATING PROCEDURES FOR POLE CLIMBING

Pole Climbing:

When aerial baskets cannot be used and pole climbing is the only accessible method of reaching the work area this Standard Operating Procedure (SOP) shall be followed. The SOP provides guidance for the safe climbing of poles and the safe procedures to follow whenever climbing or working on poles. The procedures are divided according to pre-climb inspection, work site evaluation, and safe work practices.

EQUIPMENT:

Personal Protective Equipment (PPE) based on task:

1. Personal Fall Arrest System with appropriately sized lanyard and/or lifeline.
2. Head Protection – Hardhat.
3. Eye protection – safety glasses if there are any impact hazards, such as flying debris.
4. Hand protection – gloves specific to job task.
5. Hearing protection.

Tools and Supplies that are normally required:

1. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.).
2. Tools needed for task.
3. Radios, for communication between personnel.
4. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not climb poles in inclement weather, such as high winds, ice, snow, etc.
2. Do not work at height without properly attaching Personal Fall Restraint system or lineman's belt.
3. Do not tie fall restraint system onto an adjacent pole when working.
4. Do not use a lanyard other than the one specifically designed for use with the systems.

METHODOLOGY:

The following procedures must be followed, as listed, prior to and during work that involves pole climbing:

Pre-Climb Inspection:

1. Inspect fall restraint anchor point for cracks or abnormalities in the welds or bolts.
2. Inspect fall restraint harness and lanyard according to fall protection program and training.
3. Wood poles must be inspected and tested according to the following procedure.

4. Inspect pole in accordance with OSHA standards and FAA Order 6950.18A.

   Rap the pole sharply with a hammer weighing about 3 pounds, starting near the ground line and continuing upwards circumferentially around the pole to a height of approximately 6 feet. The hammer will produce a clear sound and rebound sharply when striking sound wood. Decay packets will be indicated by a dull sound and/or a less pronounced hammer rebound. When decay pockets are indicated, the pole shall be considered unsafe. Also, prod the pole as near the ground line as possible using a pole prod or a screwdriver with a blade at least 5 inches long. If substantial decay is encountered, the pole shall be considered unsafe.

Work Site Evaluation:

1. Evaluate work area for interference from vehicular and pedestrian traffic.
2. Determine if work can be accomplished by use of an aerial lift.

Safe Work Practices:

Pole climbing must adhere to the following:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. When a climbing device is not available a lineman's belt consisting of a body harness and positioning strap must be worn when working on the pole. The strap must never be attached to insulator pins, crossarm braces, span wires, guy wires, or around crossarms beyond the outside pin. Ensure the positioning strap always encircles the pole.
3. If climbing device is present it must be utilized.
4. Verify that any workers in the vicinity of the work area don a hardhat.
5. In accordance with the facility's Lockout/Tagout Program, de-energize and lockout any equipment that will be worked on during the task

APPENDIX 4. STANDARD OPERATING PROCEDURES FOR SCAFFOLDING

Scaffolding:

This Standard Operating Procedure (SOP) provides guidance for the safe installation and operation of scaffolding and these procedures should be followed whenever operating these types of equipment. This SOP is for basic scaffolding such as, tube and coupler scaffolds and tubular welded frame scaffolds. The procedures are divided according to scaffold erection requirements, work site evaluation, and safe work practices.

EQUIPMENT: Scaffolding

Personal Protective Equipment (PPE) based on task:

1. Fall Restraint System with appropriate length lanyard
2. Head Protection – hardhat
3. Eye protection – safety glasses if impact hazards are present or safety goggles if splash hazard present
4. Hand protection – gloves specific to job task
5. Hearing protection
6. Safety shoes

Tools and Supplies that are normally required:

1. Materials to cordon off area (e.g., caution tape, safety cones, work zone signs, etc.).
2. Pulley system.
3. Tools needed for task.
4. Radios, for communication between personnel.
5. Wasp spray, sunscreen, etc.

WARNINGS:

1. Do not use unstable objects such as barrels, boxes, loose brick, or concrete blocks to support scaffolds or planks.
2. Do not use additional ladders, planks, or other materials, within the platform, to achieve additional height.
3. Do not load scaffold in excess of the working load for which it was intended.
4. Do not put scaffold platform more than 14 inches from the face of the work unless guardrails or personal fall arrest systems are utilized. This does not apply to outrigger scaffolds or plastering and lathing operations.
5. Do not put outrigger scaffolds more than a distance of 3 inches from the face of the work.
6. Do not put scaffold more than 18 inches from face of work for plastering and lathing operations.
7. Do not use any scaffolds that have been damaged or weakened.
8. Do not climb on guardrails.
9. Do not work on scaffolds in inclement weather, such as high winds, ice, snow, etc.
10. Do not throw objects to or from the platform. Use a rope and pulley to raise or lower objects to and from the ground.
11. Do not allow tools, materials, and debris to accumulate in quantities to cause a hazard.
12. Do not use a lanyard other than the one specifically designed for use with the systems, when personal fall arrest system is necessary.

METHODOLOGY:

The following procedures must be followed, as listed, prior to and during scaffolding use:

Scaffold Erection Requirements:

1. Verify toeboards are a minimum of 4 inches in height.
2. Provide a screen between toeboard and guardrail, extending along entire opening, where persons are required to work or pass under the scaffold.
3. Ensure guardrails are not less than 2 x 4 inches or the equivalent and not less than 36 inches or more than 42 inches high with a mid-rail, when required, of 1 x 4-inch lumber or equivalent. Ensure toeboards are installed at all open sides on all scaffolds more than 10 feet above the ground or floor.
4. Verify diagonal bracing is provided to prevent the poles from moving in a direction parallel with the wall of the building or from buckling.
5. Ensure poles, legs, or uprights of scaffolds shall be plumb, and securely and rigidly braced to prevent swaying and displacement.
6. Ensure scaffold is secured to permanent structures, through use of anchor bolts; reveal bolts, or other equivalent means. Do not use window cleaners' anchor bolts.
7. Verify cross bracing is provided between the inner and outer set of poles in independent pole scaffolds. The free ends of pole scaffolds shall be cross-braced.
8. Check guardrails, planks, and other parts of scaffolding for signs of wear or damage.
9. Verify all planking or platforms are overlapped, minimum of 12 inches, or secured from movement.
10. Verify platform planks are laid with their edges close together (within 1 inch) so the platform will be tight with no spaces through which tools or fragments of materials can fall.
11. Verify all planking is Scaffold Grade as recognized by grading rules for the type/species of wood used. See table in OSHA standard 1910.28(a)(9).
12. Verify scaffold planks extend over their end supports not less than 6 inches and not more than 18 inches.
13. Verify nails or bolts used in the construction of scaffolds are of adequate size and in sufficient quantity at each connection to result in designed strength of the scaffold.
14. When fall restraint harness and lanyard are needed inspect them according to fall protection program and training.

NOTE: Do not use any part, if it is defective.

Work Site Evaluation

1. Identify overhead lines and verify that a safe approach distance can be maintained. Ensure the metal scaffolding will not come near any electrical source.
2. Evaluate terrain and slope for area where scaffold will be located.
3. Check surfaces for hazards such as: buried utilities, excavations, trenches, and susceptible collapses.
4. Evaluate work area for interference from vehicular and pedestrian traffic.

Safe Work Practices:

1. Always cordon off the work area to restrict non-workers from entering the work zone.
2. Ensure the footing or anchorage for the scaffolding is sound and capable of carrying the maximum intended load without settling or displacement.
3. Verify outriggers will be on stable ground.
4. Maintain good housekeeping practices on the platform to prevent falls and tripping hazards.
5. Done appropriate PPE.
6. During all phases of the work continually monitor and ensure all requirements in this SOP are met.

APPENDIX 5. SAMPLE SITE SPECIFIC RESCUE PLAN

Facility ID and Type: _____

Type of Climbing Sleeve: _____

1. The team will perform the following tasks prior to departing home base,
   (a) Determine if task is high or low risk.
   (b) Assess capability of self-rescue, if it is infeasible evaluate the following rescue options,
      - self-rescue
      - assisted self-rescue
      - emergency services/attendant rescue
      - on site rescue
   (c) Plan how the rescue will be accomplished, such as location of work, and what equipment is needed, (e.g. ladder, rescue kit, first aid kit, or other devices)
   (d) Inspect Personal Fall Arrest Equipment
   (e) Make sure all components are serviceable and available
   (f) When on site rescue is selected, select a rescue kit based on height of elevated work surface
      - Climbs up to 55 feet use 125 feet of rope
      - Climbs up to 125 feet use 275 foot of rope
      - Climbs in excess of 125 feet – contact SECM or EOSH Coordinator for assistance
   (g) Inspect Rescue Kit
   (h) Make sure all components are serviceable and available
   (i) Bring two operational radios or other communication means between climber and observer.
   (j) Bring second climbing sleeve if it is not available at site.
   (k) Identify which employees are performing the climber and observer task and ensure they are both Expert Climber Trained.
   (l) Identify location of nearest emergency services to the site.
2. Climber Responsibilities:
   (a) Do not begin climb until observer has rescue equipment staged.
   (b) Stay 100% tied off during climb
   (c) Maintain continuous communication with observer.
3. Observer/Rescuer Responsibilities:
   (a) Test communication devices before climbing to ensure they are operational.
   (b) Stage appropriate rescue equipment and second climbing sleeve in an accessible location.
   (c) Don harness.
   (d) Maintain continuous communication with climber.
   (e) When performing rescue always maintain proper attachment to structure. Do not put yourself at risk to perform rescue!
4. Rescue Procedures: (Site Specific based upon task and location of work on tower or type of rescue option selected) Note: Rescue kits will include procedures for use.
   (a) Type of Rescue Option Selected _____
   (b) Type of task _____
   (c) Location of work on tower _____.
   (d) Type of rescue kit _____

   Comments: _____
   _____

NOTE: This sample site specific rescue plan should be used for climbing situations where self rescue is infeasible or emergency services cannot respond in 30 minutes or less.

SAMPLE
BASIC RESCUE PLAN

Facility ID and Type: _____
Type of Climbing Sleeve: _____

THE CLIMBER'S RESPONSIBILITIES ARE:

1. Prior to departing home base,
   (a) Verify that the task is low risk or a higher risk task where rescue services are available within 15-30 minutes.
   (b) Select self-rescue option or verify that emergency rescue services are available. (See Appendix F)
   (c) Inspect Personal Fall Arrest Equipment
   (d) Make sure all components are serviceable and available
   (e) Bring operational radio or other communication means to summon rescue services.
   (f) Verify climbing sleeve is available at site.
2. At site
   (a) Verify that the climbing sleeve and the ladder safety system is functional.
   (b) Verify communication means is operational.
   (c) Stay 100% tied off during climb

Rescue Service _____
Contact Means _____

Comments: _____
_____
_____

NOTE: This sample basic rescue plan should only be used for climbing situations where self-rescue is selected or emergency services can respond in 30 minutes or less.

APPENDIX 6. SAMPLE LETTER TO EMERGENCY RESCUE SERVICES

[*Date*]

[*Name of*] Fire and Rescue Service
[*Address*]

Squad Leader:

The Federal Aviation Administration (FAA) has facilities in your jurisdiction that require the FAA personnel to climb to elevated heights with fall protection systems. In order to pre-plan rescue situations in our area we need input from emergency services. Please fill out the questions below and return to in the enclosed postage paid envelope.

Information on Facility:
Facility is located: [*Fill in exact physical address*]
Number of Towers: [*Fill in*]
Height of each tower [*Be specific*] _____
The FAA climbs these towers approximately _____ times a year. *[Fill in frequency for all towers, either combined or individual e.g. 5 times a year total or 2 per/year for tower 1 and 1 per/year for towers 2, 3, and 4*]
A fire truck can or cannot access the area. [*Select correct option*]

Questions for Emergency Services: (Circle answer)
Can your facility perform a rescue from a communication type tower? Yes No
Does your facility have a ladder truck? Yes No
If yes, what is the maximum height of ladder? _____ feet
Expected response time for rescue to reach this facility _____
Comments: _____
_____

Would you wish to view the facility with FAA personnel to assess rescue procedures? Yes No
If yes, please list name and number to set up a meeting _____

If you have any questions please call [*Insert name and phone number of point of contact*].

Thank you for your time.
FAA

NOTE to SMO; be sure to enclose postage paid self-addressed envelope for return of letter.

APPENDIX 7. INDIVIDUAL SAMPLE SAFE CLIMBING GUIDELINES

RISK	RESCUE AVAILABLE	SITE LOCATION	HAZARD ASSESSMENT	NUMBER OF PEOPLE REQUIRED	SAFE WORK PRACTICE
HIGH	Over 15 - 30 minutes or not available	Remote Site	Expected time at elevation > 6 hours	2	Have emergency service numbers available
					Use full fall arrest system with 100% tie off lanyard
					Helmet with 3-point chin strap
			100% Tied Off – Using 'Y' Lanyard		Both climbers must be Expert Climber trained
					Observer should keep visual or radio contact with climber.
			Ladder Safety System not available		Communication plan
					Site specific rescue plan if necessary
					Emergency rescue kit on-site, if self-rescue is not an option

NOTE:

Visually inspect all equipment and structures prior to climbing.
Keep hands free during the climb.
Use a tool pouch to carry tools.
Use personal protective equipment as required by the task.

INDIVIDUAL SAMPLE SAFE CLIMBING GUIDELINES

RISK	RESCUE AVAILABLE	SITE LOCATION	HAZARD ASSESSMENT	NUMBER OF PEOPLE REQUIRED	SAFE WORK PRACTICE
LOW	15 - 30 minutes or less	Remote Site	Expected time at elevation < 3 hours	2	Have emergency service numbers available
					Use full fall arrest system
			Climb of less than 100 feet		Helmet with 3-point chin strap
					Expert Climber trained for >50 feet
			Positive communication can only be made through working landline		Qualified Climber trained for ≤ 50 feet
					Observer should keep visual or radio contact with climber.
			Ladder safety system to guarded platform – climber will not disconnect unless inside platform		Positive Communication/ Working land-line telephone available
			Self-Rescue is primary means to recover from a slip or fall		Two climbing sleeves available

NOTE:

Visually inspect all equipment and structures prior to climbing.
Keep hands free during the climb.
Use a tool pouch to carry tools.
Use personal protective equipment as required by the task.

INDIVIDUAL SAMPLE SAFE CLIMBING GUIDELINES

RISK	RESCUE AVAILABLE	SITE LOCATION	HAZARD ASSESSMENT	NUMBER OF PEOPLE REQUIRED	SAFE WORK PRACTICE
LOW	15 – 30 minutes or less	Non-Remote Site	Minimal time expected at elevation	1	Have emergency service numbers available
					Use full fall arrest system
			Climb of less than 100 feet		Helmet with 3-point chin strap
					Expert Climber trained for > 50 feet
			Ladder safety system to guarded platform – climber will not disconnect unless inside platform		Qualified Climber trained for ≤ 50 feet
			Self-Rescue is primary means to recover from a slip or fall		Radio or cell telephone available

NOTE:

Climbers can request two persons be present based upon hazard assessment.

Visually inspect all equipment and structures prior to climbing.

Keep hands free during the climb.

Use a tool pouch to carry tools.

Use personal protective equipment as required by the task.

APPENDIX 8. Federal Aviation Administration Southern Region Personal Protective Equipment Hazard Assessment

Job Task Climbing Tower/Antenna for Maintenance

Task #: 31

	ASSESSMENT OF HAZARD	PPE REQUIRED	CORRECTIVE ACTION	RAC *
HEAD	Falling tools from workers above or bumping head	Hard hat with chin strap or climbing helmet with chin strap - see Corrective Action	Don climbing helmet with chin strap or don hard hat with chin strap (see head protection selection chart) when there is overhead work being performed.	5
EYES OR FACE				
SKIN				
HAND	Cuts and scrapes from burrs in metal	Leather gloves	Leather gloves or other cut and abrasion resistant hand protection	4
FOOT	Slipping and falling	See Corrective Action shoes	Use shoe with heel and tread; Avoid using flat soled	4
HEARING	If near high noise area, wear hearing protection.	Ear plugs or ear muffs Rating (NRR) of 25 dBA should be worn	Ear muffs or ear plugs with a minimum Noise Reduction	4
ELECTRICAL SHOCK	When applicable, high voltage or RF burn	See corrective action	FOLLOW LO/TO procedures	5
WHOLE BODY	Fall Hazard from working on elevated work surface, climbing	Personal Fall Arrest equipment	There are several different types of Fall Protection equipment.. Ensure equipment is used properly and climber has the appropriate training.	3
RESPIRATORY				

NOTE:

* Risk Assessment Code (RAC)

These job tasks and PPE are based on general hazards that are encountered during these tasks. However, the facility supervisor has the authority and responsibility of changing the PPE if the hazards change or become more severe. Each facility supervisor also should ensure that all technicians are wearing the PPE as necessary for each task.

APPENDIX 9. FALL PROTECTION REFERENCE DOCUMENTS

GENERAL INDUSTRY - OSHA	STANDARD
Walking and Working Surfaces	1910.21-30
Powered Platforms & Building Maintenance	1910.66-67
Personal Protective Equipment	1910.129-131
Electrical Protective Equipment	1910.137
Confined Space	1910.146
Telecommunications	1910.268
Electrical Safe Work Practices	1910.333 (c) (iii)
CONSTRUCTION	
Safety Belts	1926.104
Safety Nets	1926.105
Lanyards, Lifelines	1926.107 (b) (c)
Ladder Safety Devices	1926.450 (a) (5)
Boatswain's Chairs	1926.451 (1) (4)
Roof Lifelines	1926.451 (u) (3)
Subpart M (Floor & Wall Openings & Stairways)	1926-500-503
ANSI STANDARDS	
Fall Protection for Construction and Demolition Operations	A10.14
Fixed Ladders – Safety Requirements	A14.3
Electrical Protective Equipment	A10.11
Aerial Baskets	A92.2
Safety Requirements for Personal Fall Arrest Systems, Subsystems and Components	Z359.1
Industrial Head Protection	Z89.1
DOT FAA	
Occupational Safety and Health 3900.19B	Chapter 10
Ladders and Safety Climbing Equipment	Chapter 11 Section 2-4
Electrical and Electronic Safe Practices	
FAA ASO	
Standard Ladder Drawings	ANI-330
Ladder Device Specifications	ANI-330