Department of Environmental Health & Safety

Fall Protection Program

Issued by:	Jeff Campbell
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University Policy

Ohio University is dedicated to the protection of its employees from all on-the-job injuries. All employees of Ohio University have the responsibility to work safely on the job. The purpose of this Fall Protection Plan is to (a) supplement our standard safety policy by providing safety standards specifically designed to cover fall protection on this job and (b) to ensure that each employee is trained and made aware of the safety provisions which are to be implemented by this plan prior to the start of work requiring the utilization of this Fall Protection Plan.

Scope

This Fall Protection Plan establishes the precautions, training, responsibilities, requirements and methods, which are to be used by all Ohio University Personnel while preparing for work at heights at Ohio University.

Purpose

This plan is designed to enable employees to recognize the fall hazards at Ohio University and to establish the procedures that are to be followed in order to prevent falls to lower levels or through holes and openings in walking or working surfaces. Each employee exposed to fall hazards will be trained in these procedures and will strictly adhere to them except when doing so would expose the employee to a greater hazard. If, in the employee's opinion, this is the case, the employee is to notify their supervision of the concern and the concern will be addressed before proceeding.

References

29 CFR 1926.501 – Construction Industry Rules for Duty to Have Fall Protection. This standard establishes the requirements of when to use fall protection.

29 CFR 1926.502 – Construction Industry Rules for Fall Protection Systems Criteria and Practices. This standard establishes specific methods of fall protection.

29 CFR 1926.503 – Construction Industry Rules for Training Requirements. This standard establishes the requirements for fall protection training.

ANSI A10.14-1991 – American National Standard for Construction and Demolition Operations -- This establishes the requirements for harnesses, lanyards and lifelines for construction and demolition use.

Definitions

Anchorage – A secure point of attachment to which lifeline, lanyards or deceleration devices are affixed. An anchorage is often a beam, girder, column, floor, etc.

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 use of a body belt is for positioning or carrying tools only and never to be used for fall arrest.

Carabiner – A trapezoid or oval shaped connector component with a gate or similar arrangement that remains closed until it is intentionally opened for connection or disconnection.

Competent Person – A person who is capable of identifying hazardous or dangerous conditions in the personal fall arrest system or any component thereof, as well as in their application and use with related equipment. Is also authorized to make changes regarding fall protection and the work environment to provide a safe working environment for the employees.

Deceleration Device – Any mechanism, such as a rope grab, rip-stitch lanyard, automatic self-retracting lifelines or lanyards etc., which serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit energy imposed on an employee during fall arrest.

Descent Device – A device or piece of equipment used to escape from an elevated structure such as a work platform, tower, column, etc.

Energy Shock Absorber – a device that limits shock-load forces on the body. Some lanyards have built-in shock absorbers. Most energy shock absorbers are made of a webbing material with tear away stitching designed to gradually absorb the fall arrest load.

Fall Arrest System – A system specifically designed to secure, suspend, or assist in retrieving a worker in or from a hazardous work area. A fall arrest system may not prevent a fall, but it will reduce the fall distance and prevent or reduce injury. The basic components of a fall arrest system include an anchorage, anchorage connector, lanyard, shock absorber, full body harness and self-locking snap hook.

Fall Hazard – A condition or situation that could result in a fall.

Fall Prevention – Eliminating fall hazards during all phases of work at heights, including access and egress. Examples of fall prevention measures include the use of complete scaffolds, aerial lifts, etc.

Fall Protection Systems – will normally consist of one or a combination of the following three systems: Guardrail Systems, Safety Net Systems, and Personal Fall Arrest Systems.

Free Fall – The act of falling before the personal fall arrest system begins to react by applying force to arrest the fall.

Full-Body Harness – A device with straps that can be attached to a fall arrest system. The straps are fastened around a person's body to contain the torso and distribute fall arrest forces over at least the upper thighs, pelvis, chest and shoulders.

Guardrail/Handrail System – A barrier erected to prevent employees from falling to lower levels.

Lanyard – A flexible line that secures a person wearing a harness to an anchorage, anchorage connector, or dropline. A lanyard must have a minimum breaking strength of 5,000 pounds.

Lifeline – A flexible vertical or horizontal line, secures to an anchorage or between two anchorages, to which a lanyards or harness can be attached.

One-Hundred Percent Fall Protection – A fall arrest system that utilizes a continuous connection to an anchorage point. "Y" type lanyards, double lanyards, retractable lifelines, ladder climbing devices, rope grabs, etc. are typically used to maintain a continuous connection.

Qualified Person – One who, by possession of a recognized degree or professional certificate, or by extensive knowledge and experience in the subject field who is capable of design, analysis, evaluation and specifications in the subject work, project or product.

Retractable Lifeline – A fall arrest- device that allows free travel without slack rope, but locks instantly when a fall begins. Retractable lifelines may be used when vertical movement is required but must be limited, such as in tanks, manholes, or on roofs.

Rollout – A process by which a snap hook or carabiner unintentionally disengages from another connector or object.

Self-locking Snap Hook – A hook-shaped connector with a gate or latch that remains closed and locked until it is intentionally opened for connection or disconnection. When the latch is released, it automatically closes.

Unprotected sides or edge – A walking or working surface six feet or greater in height above another surface with out means to protect employees from falling to the surface below

Wrist Harness – (Wristlets) -- Designed for work inside of a confined space, where a full body harness would be restrictive for work purposes or in the rescue efforts of an individual due to the size of the manhole, the inside design of a vessel etc.

Responsibilities

Management – It is the responsibility of Ohio University management to implement this Fall Protection Plan. Ohio University is responsible for continual observational safety checks of their work operations and to enforce the safety policy and procedures.

The Immediate Supervisor – It is the responsibility of the immediate supervisor to assure implementation of this Fall Protection Plan. The immediate supervisor is responsible for the continual observational safety checks of the work, enforcement of safety policies and procedures and correction of any unsafe acts or conditions immediately.

Employee – It is the responsibility of the employee to understand and adhere to the work plan and to follow the instructions of their immediate supervisor. It is also the responsibility of the employee to bring to management's attention any unsafe or hazardous conditions or acts that may cause injury to either themselves or any other employee.

Review of Program

The Fall Protection Program will be reviewed at least once a year by the Fall Protection Committee. This review will encompass changes in regulations, safety hazards as related to fall protection, changing demands of the program for the campus and changes in technology. The annual review will be conducted on the anniversary of the implementation of the program. This review shall be conducted in January of each year.

Procedure

This Fall Protection Plan will utilize a three-step systematic approach for protecting people from falls.

Elimination of fall hazards is the first and best line of defense against falls from heights. A careful assessment of the work and the workplace in the early stages of design/engineering and during all phases of work planning is essential. Questions should be raised about fall protection by a competent and or a qualified person regarding the worksite and the work itself. It is imperative that fall protection design be considered for the safety of employees that must work at heights, which also includes their safety during access and egress from elevated work sites. Addressing fall protection in the early phases of a project means that safety can be designed into the work process, not added as an afterthought. For example, a project can be designed so that anchorages for securing fall arrest systems could be provided at strategic locations.

Prevention of falls is the second line of defense when fall hazards cannot be entirely eliminated. This step of continuous fall protection also requires an assessment of the workplace and process. It involves making changes to the workplace so as to preclude the need to rely on the worker's behavior and personal protective equipment to prevent falls. Examples include the use of stairs, guardrails, complete scaffolds, aerial lifts and hole covers. The techniques deal with preventing the fall before it happens.

The control of falls is the last line of defense and incorporates the use of fall arrest equipment. This step should only be considered after determining that the fall hazard cannot be eliminated or the possibility of falling prevented. It includes such equipment as full body harnesses, lanyards, shock absorbers, lifelines, and anchorage connectors. Fall protection necessitates a careful assessment of the workplace in order to select the most appropriate equipment and to install and use it properly.

Tasks Requiring Fall Protection

Any task that requires an employee to be on a walking/working surface that is six feet or above a lower level is to be protected from falling to the lower level via a guardrail, safety net, or personal fall arrest system. With work that is classified as "General Industry" type of work and not "Construction" type work the action level for fall protection is four feet.

Any task that brings an employee close to a hole in a walking or working surface that may allow a fall to a lower level will utilize a protection device such as a cover, guardrail, or personal fall arrest system.

Any task that brings an employee close to an excavation and may allow a fall to a lower level will utilize a protection device such as a cover, guardrail or personal fall arrest system.

If a fall hazard cannot be eliminated, then a fall arrest system utilizing, one hundred percent fall protection, shall be utilized by an individual including but not limited to the following situations:

> In elevated positions six feet or higher where no physical protection such as handrails exists. Good judgment is required in all situations. At heights less than six feet, consideration should be given to the work environment, working conditions, good footing etc.
>
> Within six feet of the edge of a flat roof and any place on roofs with a slope of four inches to twelve inches or greater (vertical to horizontal).
>
> **NOTE**: Skylights or any other roof surface not designed to support personnel must be treated the same as the roof edge.

Working from ladders where the employee's feet are more than 6 feet above the base surface.

Workplace Assessments for Equipment Selection

Prior to selecting Fall Arrest System (FAS) equipment, the user shall make an assessment of workplace conditions where the equipment is required. The assessment shall, as a minimum, identify the presence of hazards including but not limited to, hot objects, sparks, flames and heat producing operations, chemicals, electrical hazards, sharp and abrasive edges, unguarded opening, sand blasting, and weather factors. The equipment must match the work situation and workplace environmental factors.

The workplace assessment shall identify all paths of intended user movement and all fall hazards along such paths. The user shall note the location and distances to all obstructions in the potential fall paths.

Equipment Attachment and Use

Fall Arrest System (FAS) equipment shall be rigged in a way that minimizes the free-fall distance should a fall occur and preclude the presence of vertical and lateral obstructions in the potential fall path. The rigging shall take into consideration the rescue plan and rescue equipment provision for retrieval of the user of the FAS.

The attachment point of the full body harness shall be located in the center of the wearer's back near shoulder level.

The anchorage should be located directly above the user's head to prevent a pendular swinging effect during the fall arrest.

Anchorages selected for FAS shall be stable and substantial enough to withstand twice the potential impact energy of the free-fall. When more than one FAS is attached to an anchorage, the above strengths shall be multiplied by the number of FAS attached to that particular anchorage. Examples of anchorage include: beams, girders, columns, other building steel, floors, or other designed anchorage points. DO NOT TIE OFF TO CONDUIT, CABLE TRAYS, DUCTWORK, COPPER PIPING, SMALL DIAMETER PIPE, CAST IRON PIPE, PLASTIC PIPE OR ANY PIPE HANGARS.

Do not tie off around "H" or "I" beams unless a webbing lanyard or wire core lifeline, or other equivalent connector is used (beam-straps or cross arm straps). Avoid tying off around rough or sharp edges. Do not tie a knot in lanyards, lifelines or anchorage connectors. The use of knots will reduce their strength.

Locking snap hooks and carabiners shall be compatibly matched to their associated connector to reduce the possibility of a roll out.

A suitable anchorage connector such as cross arm straps, eye bolt, mounted d-ring, beam clamp, beam trolley etc. may be used for attaching the connection of lanyards and lifelines to structural members.

Lanyards and lifelines with shock absorbers shall be installed in a manner that prevents structural interference with the absorber's function.

When vertical lifelines are used, each employee shall be provided with a separate lifeline.

All components of a FAS shall be by the same manufacturer and deemed compatible.

Any component of a FAS that has been exposed to a fall shall be taken out of service immediately.

Fall Arrest Equipment is not to be used for any other purpose other than fall arrest. Examples of improper usage include rigging and hoisting.

Employees shall not alter Fall Arrest System Equipment without Environmental Health & Safety approval. An incident investigation shall be conducted by the supervisor, if fall arrest equipment is found altered.

Training and Rescue

Prior to work requiring a Fall arrest System, users shall be trained by a competent person to select, inspect, use, store, and maintain the equipment.

Training should include the following:

- Selection of equipment, how to use a Fall Arrest System, and its application limits.

- Proper methods of donning, adjusting, and interconnecting of the equipment

- Proper attachment methods including compatibility of the size of the snap hooks, d-rings, and other connections to reduce the probability of accidental disengagement

- How to determine total fall distance to prevent striking a lower level

- Environmental and workplace factors in the selection of equipment such as sharp or abrasive edges on a beam or girder to which an individual would tie off, hot objects, or other hazards that might be present

Inspections of the work environment and the equipment prior to the use of Fall Arrest Systems equipment

Proper storage techniques

Refresher training shall be conducted for employees that need training due to unfamiliarity of the equipment or if the employee does not have the necessary skills to use the fall protection equipment or to follow this procedure. Refresher training shall also be conducted for employees if previous training or equipment is rendered obsolete.

Certification of the training will be kept by the supervisor and will include the name of the employee, the date of the training, and the signatures of the employee and the trainer. A copy of the sign in sheet shall be sent to the Environmental Health & Safety Department.

When Fall Arrest Systems are utilized, rescue considerations must be taken into consideration so that the employee can be promptly rescued or rescue themselves should a fall occur.

Inspection and Identification of Equipment

The USER shall inspect a fall arrest system BEFORE each use for the following:

Current Inspection of the Fall Arrest System

Webbing fabrics for cuts, tears, mildew, enlarged eyeholes, or other signs of wear that might affect strength

Stitching for breaks, ragged strands, loose or rotted threads, and for other signs of weakening

Metal hardware for breaks, cracks, fractures, loose anchorage, or other signs of wear or deterioration which might affect the strength of the equipment or the action of the fastening devices

Lifelines and lanyards for frayed or broken strands, cuts, and abrasions. Inner fibers should be examined for breaks, discoloration, and deterioration. Particular attention should be given to snaps and the splices connecting them to the lanyard

Any fall arrest system that has been altered should be placed out of service and an incident investigation must be conducted

Annual Inspection

A designated competent person shall inspect full body harnesses, energy shock absorbing lanyards, anchorage connector straps and lifelines for the following:

Absence or illegibility of marking

Absence of any elements affecting the equipment form, fit or function

Evidence of defects in or damage to hardware elements, including cracks, sharp edges, deformation, corrosion, alteration, excessive wear, and any other defects

Evidence of defects in or damage to straps or ropes including fraying, unsplicing, kinking, knotting, broken or pulled stitches, excessive elongation, excessive soiling, abrasion, alteration, mildew, excessive aging, and excessive wear

Absence of parts or evidence of defects in, damage to, or improper function of mechanical device and connector

Equipment passing inspection shall be marked/tagged on an inspection card attached to the harness indicating the date of inspection. When equipment reveals defects in, damage to, or inadequate maintenance of equipment, the equipment shall be permanently removed from service and destroyed.

Retractable lifelines shall be sent to the manufacturer for inspection as required by the specific manufacturer of the equipment.

Care, Service Life, and Storage of Equipment

Full body harnesses, shock absorbing lanyards and lifelines subjected to drop loading from actual use shall be taken out of service and destroyed.

Fall Arrest Systems equipment shall be kept in a clean condition and stored in a clean, dry area at normal temperature so as not to be damaged from environmental factors such as heat, light, excessive moisture, oil or other degrading elements.

All fabric webbing harnesses, lanyards, and anchorage connecting straps can be washed in mild detergent, rinsed, and dried in a warm area when they become dirty.

When hanging a harness up, use the D-ring to put the harness on the hook. This will help to eliminate the wear and tear on the harness.

Personal Fall Arrest Systems

A Personal Fall Arrest System is a system which attaches a person to a rigid structural member through a system of harnesses, lanyards, lifelines and tie off points to limit the fall of a worker. Requirements for using a Personal Fall Arrest System are:

Connecting devices shall be purchased from a reputable source and shall be forged, pressed or formed steel, or made of equivalent materials. These connectors shall have a corrosion resistant finish, and all surfaces and edges shall be smooth to prevent damage to interfacing parts of the system.

The manufacturer will certify that the D-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds. The D-rings and snap hooks shall be proof tested to a minimum tensile load of 3,600 pounds without cracking, breaking, or taking permanent deformation. Only locking type snap hooks shall be used.

On suspended scaffolds or similar work platforms with horizontal lifelines, which may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.
Horizontal lifelines shall be designed, installed, and used, under the supervision of a qualified person, as part of a complete Personal Fall Arrest System, which maintains a safety factor of at least two. Vertical lifelines shall have a minimum breaking strength of 5,000 pounds and shall be protected against being cut or abraded. Self-retracting lifelines which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lifeline or lanyard in the fully extended position. Self-retracting lifelines which do not limit free fall distance to 2 feet shall be capable of sustaining a minimum tensile strength of 5,000 pounds applied to the device with the lifeline in the fully extended position. Ropes and straps (webbing) used in lifelines shall be made from synthetic fibers. Each employee shall be attached to a separate lifeline.

Lanyards shall have a minimum breaking strength of 5,000 pounds. Self-retracting lanyards which automatically limit free fall distance to 2 feet or less shall be capable of sustaining a minimum tensile load of 3,000 pounds applied to the device with the lanyard fully extended. Self-retracting lanyards which do not limit free fall distance to 2 feet or less, rip-stitch lanyards, and tearing and deforming lanyards shall be capable of sustaining a minimum tensile load of 5,000 pounds applied to the device with the lanyard in the fully extended position. Ropes and straps (webbing) used in lanyards and strength components of body belts and body harnesses shall be made from synthetic fibers.

Anchorages used for attachment of personal fall arrest equipment shall be independent of any anchorage being used to support or suspend platforms and capable of supporting at least 5,000 pounds per employee attached, or shall be

designed, installed, and used as part of a complete personal fall arrest system which maintains a safety factor of at least two and under the supervision of a qualified person.

Personal fall arrest systems, when stopping a fall, shall limit maximum arresting force on an employee to 1,800 pounds when used with a body harness. The personal fall arrest system shall be rigged such that an employee can neither free fall more than 6 feet nor contact any lower level and bring an employee to a complete stop and limit the maximum deceleration distance an employee travels to 3.5 feet. The Personal Fall Arrest System shall also have sufficient strength to withstand the potential impact energy of an employee free falling a distance of 6 feet, or the free fall distance permitted by the system, whichever is less.

Body belts are NOT acceptable as part of a personal fall arrest system.

These guidelines and procedures are good practice for workers with combined body and tool weight less than 310 pounds. If the system is used by an employee having a combined tool and body weight of 310 pounds or more, then the system must be appropriately modified according to the manufactures' standards to provide the proper protection.

The attachment point of the body harness shall be located in the center of the wearer's back near shoulder level, or above the wearer's head. Body harnesses and components shall be used only for employee protection (as part of a Personal Fall Arrest System) and not to hoist materials.

Personal Fall Arrest Systems and components subjected to impact loading shall be immediately removed from service and shall not be used again for employee protection.

The employer shall provide for prompt rescue of employees in the event of a fall or shall assure that employees are able to rescue themselves.

Personal Fall Arrest Systems shall be inspected before each use for wear, damage and other deterioration, and defective components shall be removed from service.

Personal Fall Arrest Systems shall not be attached to guardrail systems, nor shall they be attached to hoists.

Safety Net Systems

A Safety Net System utilizes a net mechanically attached to a structural member for the purpose of preventing injury by catching a falling person. If a safety net system is used on campus, it must be approved by a member of the Fall Protection Committee.

Safety nets shall be installed as close as practicable under the walking or working surfaces on which employees are working, but in no case more than 30 feet below such level. When nets are used on bridges, the potential fall area from the walking/working surface to the net shall be unobstructed.

Safety nets shall extend outward from the outermost projection of the work surface as follows:

Vertical distance from working Level to horizontal plane Of net	Minimum required horizontal distance of outer edge of net from the edge of the working surface
Up to 5 feet	8 feet
More than 5 feet up to 10 feet	10 feet
More than 10 feet	13 feet

Safety nets shall be installed with sufficient clearance under them to prevent contact with the working surface or structures below when subjected to an impact of a worker falling to the net.

Defective nets shall not be used. Safety nets shall be inspected at least once a week for wear, damage, and other deterioration. Defective components shall be removed from service. Safety nets shall also be inspected after any occurrence from the net and at least before the next work shift.

Materials, scrap pieces, equipment, and tools which have fallen into the safety net shall be removed as soon as possible from the net and at least before the next work shift.

The construction of the safety net shall meet ANSI A10.14-1991. Each safety net (or section of it) shall have a border rope for webbing with a minimum breaking strength of 5,000 pounds. Connections between safety net panels shall be as strong as integral net components and shall be spaced not more than 6 inches apart.

Guardrail Systems

A guardrail system utilizes a horizontal rigid structural device along with toe-boards, webbing or mid rails to restrict personnel from a fall hazard. Guardrail systems and their use shall comply with the following provisions:

Top edge height of top rails, or equivalent guardrail system members, shall be 42 inches plus or minus 3 inches above the walking working level. When conditions warrant, the height of the top edge may exceed the 45-inch height, provided the guardrail system meets all other criteria of this paragraph.

When employees are using stilts, the top edge height of the top rail, or equivalent member, shall be increased an amount equal to the height of the stilts.

Mid-rails, screens, mesh, intermediate vertical members, or equivalent intermediate structural members shall be installed between the top edge of the guardrail system and the walking or working surface when there is no wall. Mid-rails, when used, shall be installed at a height midway between the top edge of the guardrail system and the walking or working level. Screens and mesh, when used, shall extend from the top rail to the walking or working surface level and along the entire opening between top rail supports. Intermediate members (such as balusters) when used between posts, shall be not more than 19 inches apart. Other structural members (such as additional mid-rails and architectural panels) shall be installed such that there are no openings in the guardrail system that are more than 19 inches wide.

Guardrail systems shall be capable of withstanding, without failure, a force of at least 200 pounds applied within 2 inches on the top edge, in any outward or downward direction, at any point along the top edge. When the 200 pound test load is applied in a downward direction, the top edge of the guardrail shall not deflect to a height less than 39 inches above the walking or working level. Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members shall be capable of withstanding, without failure, a force of at least 150 pounds applied in any downward or outward direction at any point along the mid-rail or other member.

Guardrail systems shall be so surfaced as to prevent injury to an employee from punctures or lacerations, and to prevent snagging of clothing.

Top rails and mid-rails shall be at least one-quarter inch nominal diameter or thickness to prevent cuts and lacerations. If wire rope is used for top rails, it shall be flagged at not more than 6-foot intervals with high visibility material. Manila, plastic or synthetic rope being used for top rails or mid-rails shall be inspected as frequently as necessary to ensure that it continues to meet the strength requirements of this section.

When guardrail systems are used at hoisting areas, a chain, gate or removable guardrail section shall be placed across the access opening between guardrail sections when hoisting operations are not taking place.

When guardrail systems are used at holes, they shall be erected on all unprotected sides or edges of the hole.

When guardrail systems are used around holes used for the passage of materials, the hole shall have not more than two sides provided with removable guardrail sections to allow the passage of materials. When the hole is not in use, it shall be covered over with a cover, or a guardrail system shall be provided along all unprotected sides or edges.

When guardrail systems are used around holes, which are used as points of access (such as ladder ways), they shall be provided with a gate, or be so offset that a person cannot walk directly into the hole.

Guardrail systems used on ramps and runways shall be erected along each unprotected side or edge.

Variances from this Procedure

Any variance from this Fall Protection Procedure must be submitted in writing to the Ohio University Occupational Safety Coordinator.

Any variance from this Fall Protection Procedure must be approved by the Ohio University Occupational Safety Coordinator, the supervisor of that particular job, and at least one member from the Fall Protection Committee.

SEE ATTACHED CHECKLIST FOR GUIDELINES FOR FIELD USE AND INSPECTION.

FALL-ARREST SYSTEM CHECKLIST
(Must answer yes to all applicable questions)

ANCHORAGE POINTS

1. Do workers know appropriate anchorage points for each task that requires a fall-arrest or restraint system? _____

2. Are all anchorage points stable, substantial, and have sufficient strength to withstand twice the potential impact energy of the free-fall? _____

3. Are all anchorage points for body harnesses located at shoulder height and are anchorage points for self-retracting lifeline systems located overhead? _____

4. Can a worker move from one station to another or climb up and down without exposure to a fall? _____

5. If the lifeline, lanyard, or self-retracting lifeline is not permanently attached to an anchorage point at the elevated work area, is the first worker up or the last worker down protected while climbing and traversing? _____

VERTICAL LIFELINES

1. Does the lifeline have a minimum breaking strength of 5,000 pounds (2,268) kilograms? _____

2. Is the lifeline protected from abrasive or cutting edges? _____

3. Does the system provide fall protection as the worker connects to and releases from the lifeline? _____

4. Is the lifeline arranged so workers never have to hold it for balance? _____
(A lifeline should never be used for balance.)

5. Is the vertical segment integrated with the horizontal segment to provide continuous fall protection? _____

HORIZONTAL LIFELINES

1. Has the entire horizontal lifeline system been designed and approved by a competent person? _____

2. Have the anchorages to which the lifeline is attached been designed and evaluated specifically for a horizontal lifeline? _____

3. Has the designer of the system approved the number of workers who will be using it? _____

4. Is the rope or cable free from signs of wear or abrasion? _____

5. Does the rope or cable have the required initial sag? _____

6. Have the workers been warned about potential falls? _____ Have the clearances been checked? _____

7. Is the hardware riding on the horizontal lifeline made of steel? _____ (Aluminum is not permitted because it wears excessively.)

FALL ARRESTERS

1. Is the fall arrester compatible with the lifeline on which it is to be installed or operated? _____

2. Is the fall arrester in operational condition? _____

3. Is the fall arrester equipped with a change-over lever that allows it to become a stationary anchor on the lifeline? _____

4. Is the fall arrester equipped with a locking mechanism that prevents unintentional opening of the device and subsequent disengagement from the lifeline? _____

5. Is the fall arrester's "up" direction marked properly so that the equipment can be attached to the line correctly? _____

6. Is the fall arrester included in a regular maintenance program? _____

LANYARDS

1. Is the lanyard length as short as necessary and in no case greater than 6 feet (1.8 meters)? _____

2. Are manually adjustable lanyards used when it is desirable to be able to take slack out of the lanyard? _____

3. Does the lanyard have a shock-absorbing feature to limit the arresting forces to 500-600 pounds (227- 272 kilograms)? _____

4. If the lanyard has a shock absorber, is it obvious to the user that the shock absorber has been deployed? _____ (is there a warning label, broken pouch, etc.?)

5. Have you prohibited tying of knots from the lanyard to the lifeline? _____ (Mechanical rope grabs or fall arresters must be used.)

RETRACTABLE LIFELINE (RL)

1. Are workers properly trained to use an RL? _____

2. Is the RL under a regular maintenance and inspection program? _____

3. Is the end of the cable properly spliced? _____ (thimble eye, Flemish eye-spliced, and swaged fitting/ferrule?)

SNAP HOOKS

1. Have double-locking snap hooks been used? _____

2. Is the snap hook attached to the D-ring, eye bolt, or other hardware in a manner approved by the manufacturer of the snap hook? _____

3. Are snap hooks inspected regularly for stress, wear, distortion, and spring failure? _____

4. Are snap hooks arranged so they are never connected to each other? _____ (They should NOT be connected to each other.)

5. Are snap hooks arranged so they are never connected to each other? _____ (They should NOT be connected to each other.)

BODY HARNESSES

1. Are full-body harnesses selected for a particular job quipped with all necessary attachment points (for fall arresting, work positioning, descent control, rescue, or ladder fall-protection systems)? _____

2. Are body harnesses inspected regularly for wear, abrasion, broken stitching, and missing hardware? _____

3. Is the Velcro type of closure prohibited from all load bearing connections? _____

4. Have workers been instructed in the use and care of body harnesses/body belts? _____

OTHER CONSIDERATIONS

1. Has the free-fall distance been considered, so that a worker will not strike a lower surface or object before the fall is arrested? _____
2. Have pendulum-swing fall hazards been eliminated? _____
3. Have safe methods to retrieve fallen workers been planned? _____
4. Is all of the fall-arrest equipment free of potential damage from welding, chemical corrosion, or sandblasts? _____
5. Are all components of the system compatible according to the manufacture's instruction? _____
6. Have employees been properly trained in the following issues?

   Manufacturer's recommendations, restrictions, instructions, and warnings _____

   Location of appropriate anchorage points and attachment techniques _____

   Problems associated with elongation, deceleration distance, method of use, inspection, and storage _____

7. Are all regular inspections performed by trained inspectors? _____
8. Are written reports maintained? _____