FSGA/HAAF GARRISON
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GARRISON SAFETY SOP – ANNEX U

FALL PROTECTION AND LADDER SAFETY

FSGA/HAAF Safety Program SOP
29 October 2024

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1. Purpose:

This Annex to the FSGA/HAAF Garrison Safety and Occupational Health (SOH) SOP provides policies and procedures and assigns responsibilities for the implementation of the FSGA/HAAF Fall Protection and Ladder Safety Program. The purpose of this program is to protect all employees engaged in activities that expose them to potential falls from elevations.

NOTE: *Any work performed four feet (ft) or above a lower surface requires the use of a fall protection system. Engineering controls should always be the first option for selection whenever possible. An example would be relocating a hazardous task to ground level, eliminating the need for fall protection.*

2. Scope

This Annex to the Garrison SOH SOP applies to all military and civilian personnel assigned to the FSGA/HAAF Garrison. It is intended to provide additional information so all levels of leadership, SMs, and civilian workforce can properly implement the Garrison SOH Program.

3. References

29 CFR 1910, OSHA Standards for General Industry

29 CFR 1926, Subpart M Fall Protection

FAR 52.236.14, Availability and Use of Utility Services

AR 25-400-2, The Army Records Information Management System (ARIMS)

AR 385-10, The Army Safety Program

DA Pam 25-403 – Guide to Recordkeeping in the Army

DA Pam 385-10, Army Safety Program

4. Records Management:

Records created throughout the processes prescribed by this Annex will be identified, maintained, and disposed of according to AR 25-400-2 (The Army Records Information Management System (ARIMS) and DA Pam 25-403 (Guide to Recordkeeping in the Army). The primary means of recordkeeping for the Garrison Safety Office (GSO) will be the Army Safety Management Information System (ASMIS) located at https://mishap.safety.army.mil . Record titles and descriptions are available on the ARIMS website https://www.arims.army.mil

5. Responsibilities

Garrison Safety Office (GSO):

- Develop and implement the installation Fall Protection Program for the commander.
- Provide guidance and technical assistance to directors, division chiefs and supervisors regarding implementation of and compliance with elements of the Fall Protection Program
- Ensure training is provided and/or assist with training of FSGA/HAAF personnel.
- Ensure a work stoppage if an imminently dangerous situation exists.

- Contact COR when a contractor is observed violating established fall protection rules.
- Serve in the identification of hazardous and dangerous conditions in the workplace.
- Inspect installation of approved fall protection systems to ensure compliance with the United States Army Corp of Engineers (USACE) Safety and Health Requirements Manual EM 385-1-1, 29 Code of Federal Regulations (CFR) 1910, 29 CFR 1926 and applicable American National Standards Institute (ANSI) standards.
- Approve fall protection equipment purchase lists.
- Have full authority to implement the Fall Protection Program.
- Develop fall protection training programs.
- Periodically inspect fall protection equipment to ensure compliance with proper inspection, use, care, maintenance, cleaning, and storage procedures as outlined in this regulation.

Supervisors:

- Ensure all personnel who have a potential exposure to fall hazards adhere to established fall protection requirements.
- Ensure affected personnel have the training necessary to identify specific fall hazards and understand the control measures and how to apply them.
- Ensure training enables personnel to know when personal fall arrest equipment is necessary, what type of equipment is necessary, and how to properly don, remove, adjust, and wear it. Individuals must also know and understand the limitations of the equipment and the proper care, maintenance, useful life, and disposal requirements.
- Ensure training for personnel is properly documented with records maintained at the local work center.
- Ensure that all required fall protection equipment is provided for personnel, being used safely, and is inspected, stored, and maintained properly.
- Ensure individual components of the issued equipment are properly compatible and in good working order.
- Conduct frequent evaluations of the workplace to identify any fall hazards associated with new job requirements or work practices. Document task related hazards using the Job Hazard Analysis (JHA) format. (see Annex G, Job Hazard Analysis Procedures)
- Ensure appropriate disciplinary action is taken when employees fail to comply with established fall protection requirements.

- Ensure all purchases of fall protection equipment, such as full body harnesses, self-retracting lifelines, and lanyards, etc. are approved by the GSO. It is essential that equipment being purchased is designed for the use of “fall protection” for personnel.

Employees:

- Participate, as directed, in all fall protection and personal protective equipment training.
- Comply, to the fullest extent possible, with all safety and health standards outlined in this regulation.
- Maintain their fall protection equipment in a safe and sanitary condition.
- Report to the immediate supervisor any problems (e.g. defective/worn equipment) observed which could compromise worker safety or health.
- Inspect their fall protection equipment daily prior to use.

Contract Office Representatives (CORs):

- Program are integrated into all applicable contracts, and that contractors understand when either they or their sub-contractors perform work on the installation or facility, they must adhere to the established guidelines set forth in the program document. Contractors will be informed of this requirement as well as the on-site construction rules that apply during the pre-construction conference.
- Ensure all construction contracts, prior to start of construction, include specific sections which address fall protection, and that contractors comply with the USACE Manual 385-1-1 IAW Federal Acquisition Regulation (FAR) 52.236-14. It is the contractor’s responsibility to provide fall protection to all workers exposed to fall hazards, and to ensure that they have been properly trained. Contractors shall submit a written Fall Protection and Prevention (FPP) Plan as well as subcontractor workers, to the COR for review and approval. A sample FPP Plan can be found in 29 CFR 1926.502(k).
- Ensure the contractor does not begin any construction-related activities until the submitted FPP has been approved. Fall protection will be one of the main topics discussed during the Pre-Construction/Pre-Commencement Meeting.

6. Training Requirements

- Personnel should be able to demonstrate their understanding of the training through practical application. Training is required prior to working at elevations and then annually thereafter.
- Personnel requiring training include:
    - All personnel who are potentially exposed to fall hazards.
    - Supervisors of personnel engaged in work at elevations.
    - Engineers, CORs and maintenance personnel.
    - GSO personnel.
- All personnel who are exposed to fall hazards shall be trained in the following:

- Know how to recognize/identify specific fall hazards in the workplace, understand control measures and how to apply them.
- Know when personal fall arrest equipment is necessary, what type of equipment is necessary, and how to properly don, remove, adjust, and wear equipment.
- Know and understand the limitations of the equipment, and proper care, maintenance, useful life, storage, and disposal requirements.
- How to inspect the equipment and recognize problems which could compromise worker safety or health.
- Proper anchoring and tie-off techniques.
- Estimation of free-fall distance, including determination of deceleration distance and total fall distance.

- The employee shall be retrained when determination is made that any affected employee who has already received training does not have the understanding and skills required. Circumstances where retraining is required, include, but is not limited to where:
  - Changes in the workplace render previous training obsolete.
  - Changes in the types of fall protection systems or equipment to be used render previous training obsolete.
  - Inadequacies in an affected employee's knowledge or use of fall protection systems or equipment indicate the employee has not retained the requisite understanding or skill.
- Architects, engineers, and in-house designers involved in planning and designing buildings, facilities, structures, and equipment should be trained to incorporate fall protection and prevention control measures into their design work in order to help contractors during the construction phase, and to provide protection to workers who will be required to perform maintenance.
- Fall protection training should emphasize that fall hazards should be eliminated whenever possible, and when they cannot, there should be a mechanism in place to protect workers from fall hazards.

7. Fall Protection Systems

- Types of Fall Protection Systems include:
  - Guardrail System
  - Safety Net
  - Fall Arrest System
  - Restraint (Tether) Systems
  - Positioning Device Systems
  - Ladder Climbing (Safety) Devices
  - Horizontal Lifelines
  - Vertical Lifelines

- Controlled Access Zone
- Warning Line System
- Arial Lifting Equipment, Working Platforms and Catwalks
- Falling Object Protection
- Covers

8. Fall Protection Guidelines

- Communication Towers.
  - The preferred method for accessing/exiting towers to perform maintenance work is by the use of fixed ladders with attached climbing devices because it provides conventional fall protection during ascent and descent of the structure.
  - To secure permanent anchorage on the tower, the first worker up requires a portable anchor, full body harness, use of self-retracting lanyard (SRL), ladder climbing device or rope grab.
  - After permanent anchorage is secured in place, workers that follow the first person up will require full body harness, SRL, vertical lifeline, ladder climbing device and/or rope grab.
  - When working on towers, workers are required to wear fall protection equipment at all times.
- Roof Work.
  - On sloped roofs. Use full body harness, SRL, and roof brackets/anchors for anchorage points (single or multiple connections designed for 5000 pounds (lbs) per person). Also use slide guards.
  - On flat roofs with no parapet or guardrails. When working six feet from the edge, use full body harness, restraining system and/or lanyard/SRL. Establish a warning line system six to ten feet away from the leading edge or temporary guardrails for workers without a fall arrest system. Personnel working within the warning line system do not require fall protection (exceptions may apply, such as high winds).
  - Whenever danger of roof collapse is imminent (e.g. performing emergency roof repair) as determined by a Qualified Person, appropriate fall protection will be required.
  - No work shall be performed on roofs when winds exceed 40 miles per hour or when the task is determined to be unsafe due to environmental conditions.
- Leading Edge Work.
  - Use horizontal lifeline, full-body harness, lanyard/SRL, roof anchors and a restraining system or a guardrail system.
- Elevating Work Platforms/Aerial Lifting Equipment (e.g. scissor lift, manlift).
  - No work shall be performed on aerial platforms/lifts when wind exceed 25 miles per hour except to move the platform from an operating to a storage position. Wind speed shall be determined based on the best available information, which includes on-site

anemometer readings and local weather forecasts which predict wind velocities for the area.

- On exterior installations, an anemometer shall be mounted on the platform to provide information of on-site wind velocities prior to and during the use of the platform. The anemometer may be a portable (handheld) unit which is temporarily mounted during platform use.
- When working from elevated work platforms six feet or higher, elevating work platforms must be equipped with standard guardrail and toe boards.
- A worker's feet shall never leave the floor of the elevating work platform. If the worker's feet leave the floor of the elevating work platform or the worker is required to exit the lift at height, FPP must be completed, and continuous fall protection must be provided.
- If the manufacturer specifies, use of a full body harness with lanyard. Lanyard shall be tied-off inside the work platform to a manufacturer approved anchorage point. This prevents ejection if the equipment is struck or knocked over.
- The manufacturer of an aerial lift can modify the old equipment by installing approved anchorage connections to tie off for the use of a fall arrest system. Usually, guardrails in the aerial lifting equipment are not designed to withstand the force generated by a fall and cannot be used as anchorages.
- Use of planks, ladders, or any other device on the aerial platform for achieving additional height or reach is prohibited.
- When working over or adjacent to a roadway, traffic control measures must be implemented. Employees working adjacent to roadways must wear vests that are highly visible and have reflective markings.

- Working on equipment at elevations four feet or more above a lower level. A lower level is considered a surface onto which an employee can fall and includes, however is not limited to, ground levels, floors, platforms, ramps, equipment, and structures.
  - The preferred method for accessing the top of equipment is the use of fixed maintenance platforms/work stands, properly placed around the equipment.
  - If it is not possible to have a work stand completely around the equipment, the next preferred method is the use of Type B-1 or B-4 work stands.
  - If it is not possible to have either properly placed maintenance platforms or Type B-1 or B-4 work stands, a full body harness with a self-retracting lifeline tied off to an approved anchorage must be utilized.
  - At no time will an overhead hoist be activated while an employee's fall protection system (full body harness and lifeline) is tethered to the hoist or to the bridge crane. The hoist circuit breaker shall be properly locked out and tagged out anytime an employee is tied off to the hoist or the bridge. Violation of this rule could lead to serious injury or death.

9. Fall Protection Inspection, Use, Maintenance, and Storage

- As a general rule, always consult equipment manufacturer recommendations for inspection, use, care, and maintenance. The operator's manual shall be included with the equipment for employee reference.

- Under no circumstances shall a full-body harness or lanyard remain in service for a period to exceed five years. When a harness or lanyard is put into service, the initial service date will be entered on the tag provided by the manufacturer.
- Personal fall protection equipment shall be inspected IAW manufacturer instructions by the worker prior to each use to determine safe working condition. A competent person shall inspect the equipment at least annually and whenever subjected to severe use.
- Full-Body Harness.
    - Examine nylon webbing to ensure there are no burn marks which could weaken material.
    - Verify there are no torn, frayed, or broken fibers, pulled stitches or frayed edges anywhere on the harness.
    - Examine the D-ring for excessive wear, pits, deterioration, or distortion.
    - Verify buckles are not deformed, cracked, and operate properly.
    - Check each grommet (if present) to verify it is secure and not deformed from abuse or fall.
    - The harness should never have additional punched holes.
    - All rivets should be tight and not deformed.
    - Check tongue/straps for excessive wear from repeated buckling.
- Lanyard/Shock Absorbing Lanyards.
    - Check lanyard material for cuts, burns, abrasions, kinks, knots, broken stitches, and excessive wear.
    - Inspect snap hooks for distortions in the hook, locks, and eye.
    - Check carabiner for excessive wear, distortion, and lock operation.
    - Ensure all locking mechanisms seat and lock properly.
    - Once locked, locking mechanism should prevent hook from opening.
    - Visually inspect shock absorber for any signs of damage, paying close attention to where the shock absorber is attached to the lanyard.
    - Retire the lanyard when the integral energy absorber has been even slightly expended or if it has been used for any purpose other than fall protection.
- Snap hooks.
    - Inspect snap hooks for any hook and eye distortions.
    - Verify there are no cracks, chips, abrasions, discoloration, or pitted surfaces.
    - The keeper latch should not be bent, distorted, or obstructed.
    - Verify the keeper spring securely closes the keeper latch.
    - Test the locking mechanism to verify the keeper latch locks properly.
    - If the snap hook does not function properly, it shall be tagged and removed from service.

- Self-Retracting Lanyards/Lifelines. Self-retracting lifelines are generally longer than self-retracting lanyards. These devices are specifically engineered for vertical fall arrest.
    - Visually inspect the body to ensure there is no physical damage.
    - Ensure all nuts and rivets are tight.
    - Ensure the entire length of the nylon strap/wire rope is free from any cuts, burns, abrasions, kinks, knots, broken stitches/strands, excessive wear and retracts freely.
    - Test the unit by pulling sharply on the lanyard and/or lifeline to verify the locking mechanism is operating properly.
    - If the manufacturer requires, make certain the retractable lanyard is returned to the manufacturer for scheduled annual inspections.
- Check manufacturer guidelines for inspection. If any item is damaged or defective, it shall be immediately tagged, removed from service, and replaced.
- Due to the variability in the structural strength of different materials, before using an anchorage point a Qualified Person (QP) must be contacted to ensure that the anchorage point meets/exceeds regulatory requirements.
- All safety lines and lanyards shall be protected against cuts or abrasions. Padding must be used wherever sharp edges exist.
- All fall protection/restraint equipment shall be stored in weatherproof containers or lockers when not in use. Equipment shall not be allowed to lie in water or direct sunlight, since this will affect equipment strength.
- When using fall arrest systems, all components shall be designed for use with each other, or approval must be obtained from the manufacturer or qualified person to use a configuration that uses different components. All system components shall be compatible.
- All systems must be installed, assembled, and disassembled IAW manufacturer directions. Failure to follow these instructions could lead to the possible failure of a system.
- In the event of a fall, secure all equipment involved and contact the GSO for disposition. Do not reuse safety equipment that has been used in a fall.

10. Ladder Safety

- Have all ladders and work stands/platforms inspected in the area of responsibility by a competent person daily. Where structural damage or other hazardous defect is found, the ladder or work stand shall be tagged or marked “Danger, Do Not Use” and taken out of service for repair or destruction. Inspections shall address the following:
    - Loose or broken steps or rungs.
    - Excessively dented rungs.
    - Broken, split, or cracked rails.
    - Rail dents, or bends.
    - Loose or Missing nails, manufacture information or warning labels, screws, bolts, rivets, rung-to-side-rail connections, or hardware connections.

- Missing, broken, or damaged safety shoes, casters/wheels or locking devices.
- Loose, bent, or broken hinges or spreaders on stepladders.
- Defective locks on extension ladders.
- Deteriorated or broken ropes or sheaves on extension ladders.
- General serviceability.
- Excessive corrosion to welds and structure.
- All welds are in good condition.
- Hinges are in good operational condition.
- All movable parts are in good condition.
- Check for missing parts and accessories (nuts, bolts, locking pins, side rails, lanyards, etc.).
- Wheels, casters, locking devices, etc., are in good working condition.
- Wheel brakes (if equipped) are in good operational condition.
- Hydraulic hand pumps have been properly serviced, are fully operational, and there are no indications of fluid leaks.
- All surfaces are free of grease, oil, standing liquid, or other slippery materials.
- Anti-abrasion cushions are in good working condition.

- Provide instruction for personnel in the safe use and care of ladders and work stands/platforms.
- Ensure ladders and work stands/platforms are used and maintained in accordance with (IAW) the requirements of this regulation.
- Ensure work stands are available in sufficient numbers to perform all necessary work operations safely.
- Ensure employees do not climb on equipment above the four-foot level without adequate fall protection or an appropriate work stand.
- Perform an initial inspection of all new ladders prior to issuing ladders to employees.
- Remove and replace all defective ladders.

11. Ladder Usage

- Perform an initial inspection of all new ladders prior to first use.
- Use, inspect and maintain ladders and work stands IAW the requirements of this regulation.
- Portable and extension ladders shall be placed at a safe angle (the distance from the foot of the ladder to the wall or object against which it is leaning shall be approximately ¼ the length of the ladder). The ladder shall be so placed as to prevent slipping or it shall be lashed or held in position.

- Ladders used to gain access to roofs shall extend at least three feet (ft) above the point of support or roofline.
- Ladders shall not be used in a horizontal position as platforms, runways, or scaffolds.
- Ladders shall not be placed on boxes, barrels, or other unstable bases to obtain additional height.
- Ladders shall not be tied or fastened together to provide longer sections.
- Non-conductive ladders shall be used by electrical maintenance personnel or other personnel working in the vicinity of live electrical wiring.
- Tops of ladders or stepladders shall not be used as steps.
- When it is necessary to place ladders in front of doors which open toward the ladder, adequate means shall be taken to block, lock, or guard the door and to divert traffic.
- Users of ladders/work stands shall make a visual inspection prior to each use to ensure it is in a safe and serviceable condition. Defective ladders or work stands shall not be used.
- Improvised or make-shift ladders shall not be used.
- Ladders made by fastening cleats across a single rail shall not be used.
- When ascending or descending, the climber must face the ladder and use three-point contact.
- Straight ladders used to gain access to working areas or used as a working surface shall be used only when a stepladder cannot be used.
- Portable straight ladders shall be equipped with non-slip ladder shoes or otherwise secured against slipping. Extension sections of extension ladders shall not be used as separate portable ladders unless they are equipped with non-slip shoes or are securely fastened.
- Portable ladders shall be placed so the side rails have a secure footing. The top rest shall be reasonably rigid and have ample strength to support the applied load.
- To support the top of a ladder at a window opening, a board shall be attached across the back of the ladder, extending across the window, and providing firm support against the building walls or window frames.
- Ladders shall not be used for other than their intended purposes.
- Two-section extension ladders shall have a minimum overlap (See OSHA Guidance)
- Portable rung ladders with reinforced rails shall be used only with metal reinforcement on the underside.
- Stepladders shall be used only when completely opened and placed on a firm level surface.
- Straight or extension ladders shall be securely tied in position prior to commencing work.
- Ladders shall not be climbed by more than one person at a time.
- At least two persons shall be assigned to jobs requiring work at elevated levels.

- When an employee is required to climb from a ladder onto beams or other exposed locations, a safety harness and lanyard shall be worn and properly anchored.
- Ladders shall not be placed close to live electrical wiring or against any operational piping (acid, chemical, sprinkler system, etc.).
- Ladders must not be used during strong winds except in an emergency and then only when securely fastened.

12. Ladder Care and Maintenance

- Ladders shall be stored in a manner designed to protect the ladder when it is not in use. Material shall not be placed on ladders while in storage. Untreated wooden ladders shall not be exposed to the elements and must not be stored in damp places.
- Ladders shall be maintained in good condition at all times. The ladder shall be inspected before each use. Working parts and rung/step-to-side connections shall be checked. Where structural damage or other hazardous defect is found, the ladder shall be taken out of service and either discarded or submitted for repair.
- Metal bearings of locks, wheels, pulleys, etc., shall be frequently lubricated.
- Frayed or badly worn rope shall be replaced.
- Safety feet and other auxiliary equipment shall be kept in good condition.
- Rungs shall be kept free of grease, oil, and other slippery materials.
- Ladders dropped or tipped over shall be inspected for dents, bends, or cracks on side rails, rungs, or steps. All rung/step-to-side-rail connections shall be checked, as well as hardware connections, rivets (for shear), and all other components.
- Ladders exposed to excessive heat, as in the case of fire, shall be inspected visually for damage.
- Wooden ladders shall not be painted except for a minimum amount needed for identification or warning, and then on only one face of the side rails. Wooden ladders may be coated with a transparent, non-conductive finish such as varnish, shellac, or a clear preservative.

Appendix A – Abbreviations

AR	Army Regulation
ARIMS	Army Records Information Management System
ASMIS	Army Safety Management Information System
CFR	Code of Federal Regulations
CO	Carbon Monoxide
COR	Contract Office Representative
DA Pam	Department of the Army Pamphlet
DPW	Directorate of Public Works
DoDI	Department of Defense Instruction

FSGA	Fort Stewart Garrison
GC	Garrison Commander
GSO	Garrison Safety Office
HAAF	Hunter Army Airfield
OSHA	Occupational Safety and Health Administration
POC	Point of Contact
PPE	Personal Protective Equipment
RM	Risk Management
SM	Service Member
SOH	Safety and Occupational Health
SOHMS	Safety and Occupational Health Management Systems
SOP	Standard Operating Procedure
USO	Unit Safety Officer

APPENDIX B – Definitions

Accident: An unplanned event that causes personal injury or illness, or property damage

Anchorage: A secured structure that can safely withstand forces exerted by fall arrest and rescue equipment. The structure can be in the form of a beam, girder, column, or floor. Anchorage is either engineered or improvised. The anchorage must be capable of withstanding a minimum force of 5,000 pounds per person or engineered by a qualified person for twice the maximum arresting force.

Anchorage Connector: The means by which a fall arrest system is secured to the anchorage. This can include a steel cable sling, anchor strap, load-rated eye bolt, tripod, davit arm or any other device designed to suspend human loads and capable of withstanding forces generated by a fall.

Arresting Distance: Total vertical distance required to arrest a fall. This includes activation and deceleration distance. It does not include free-fall distance.

Arresting Force: The force exerted on a worker or test weight when a fall protection system stops a fall. The amount usually expresses the peak force experienced during a fall.

Authorized Person (End User): A person approved by the employer to perform a specific type of work at heights (e.g. building maintenance, equipment maintenance, roof repair, etc.) and at a specific location; a person who is trained on the use of fall arrest systems.

Body Belt: A strap with means both for securing it about the waist and attaching it to a lanyard, lifeline, or deceleration device (these are prohibited).

Body Harness: Means of configuration of connected straps secured about the employee in a manner that will distribute the fall arresting forces over at least the upper thighs, waist, shoulders, chest and pelvis, with means for attaching a lanyard to other components of the

personal fall arrest system. Full-body harness is the only body support device allowed by OSHA when a free-fall distance exceeds 2 feet.

Body Restraint: System An application of the fall protection equipment, in which horizontal travel is restricted, preventing exposure to fall hazards. The system consists of a strap device, such as chest harness or full body harness that can be secured around a worker and attached to a load-bearing anchorage in order to restrict travel and limit fall hazards. The strap can be single or multiple.

Buckle: A connector used for attaching the strap or webbing segments together or to themselves.

Cable Grab: A fall arrest device that locks by either a cam lock (locking arm) or inertia when a free fall is sensed. It is attached to a worker directly or by a lanyard that slides up or down a fixed or vertical cable or rope lifeline.

Carabiner: A connector or component generally consisting of an oval or trapezoidal shaped body with a closed gate or similar arrangement.

Competent Person (CP) for Fall Protection: 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. Note: OSHA CP definition also requires that a CP have authority to take prompt corrective measures to eliminate the hazards of falling.

Connector: A device that is used to couple (connect) parts of the personal fall arrest system 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 to a lanyard or self-retracting lanyard).

Connecting Means: The method to connect a body support to an anchorage, such as a lanyard or a carabiner for the purpose of providing a protected mobility for an elevated work task.

Controlled Access Zone (CAZ): A zone to restrict access to leading edge work. The CAZ is bound by a control line and should run the full length of the leading edge and connect on each side to a guardrail or wall. The control line can be made of rope, wire, tape or equivalent material and shall be supported by posts and marked with a highly visible material. CAZ is used when a guardrail system, fall arrest systems or safety nets cannot be used or installed.

Conventional Fall Protection Systems: Guardrail systems, personal fall arrest devices, or safety nets.

Critical Sag: The deflection of the Horizontal Lifeline (HLL) where the arresting force exactly equals the weight of the worker. The worker’s speed of fall does not decrease until the sag of the line is greater than the critical sag. Critical Sag is a very important consideration for long span HLL with in-line energy absorber.

Deceleration Device: Any mechanism, such as a rope grab, rip-stitch lanyard, specially-woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards, etc., that serves to dissipate a substantial amount of energy during a fall arrest, or otherwise limit the energy imposed on an employee during fall arrest.

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 locations of an

employee's body harness attachment point at the moment of activation (at the onset of fall arrest forces) of the deceleration device during a fall, and the location of that attachment point after the employee comes to a full stop.

D-ring: A connector used in a harness or a positioning belt as an attachment element for fall arrest attachment. It is also used in lanyard, energy absorbers, lifelines, and anchorage connectors as an integral connector. D-rings can be used for work positioning and restraint.

Energy (Shock) Absorber: A component whose primary function is to dissipate energy and limit deceleration forces that the system imposes on the body and the anchorage system during fall arrest.

Engineered Anchor: An anchorage designed and approved by a qualified person.

Failure: Load refusal, breakage, or separation of component parts. Load refusal is the point where the ultimate strength is exceeded.

Fall Arrest System: A combination of equipment and components connected together, designed to stop a person from striking a lower level or an obstruction during a fall.

Fall Prevention: The elimination and minimization of potential fall hazards, lessening the chance of employee exposure to falls. Any same-level means used to reasonably prevent exposure to a fall hazards; examples of fall prevention are guardrails, walls, floors, and area isolation.

Fall Protection: Action and procedures to effectively protect a worker from fall hazards.

Fall-Restraint System: A system designed to restrain a worker from reaching an exposed fall hazard. The system includes personal fall protection equipment, acceptable anchorage systems, and trained worker and administrative procedures.

Force Factor: The ratio of peak arresting force using rigid weight compared to a human body having the same weight, both falling under identical conditions. For comparison between rigid weight and body weight, multiply the rigid weight by 1.4 to allow for body comparison.

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

Free Fall Distance: The vertical distance from the onset of a fall to a point where a fall arrest system is activated or engaged. (This is 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. This 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).

Hazard: An actual or potential condition that can cause injury, illness, or death of personnel, damage to or loss of equipment, property, or mission degradation.

Horizontal Lifeline (HLL): A fall arrest system that uses a line made from rope, wire rope or metal railing that spans horizontally between two end anchorages. The assembly includes the necessary connectors, turnbuckles, in-line energy absorbers, shackles, etc., and may include intermediate anchorages. This is a component of a fall protection system, which consists of a trained worker wearing appropriate fall protection equipment that enable them to safety traverse/work in the horizontal plane. The HLL shall be designed, installed, and used under the supervision of a qualified person.

Initial Service Date: The date the fall protection equipment is opened and put into service.

Ladder Climbing (Safety) Device: A device or climbing sleeve connected to the front D-ring on the climber's full body harness that slides up or down a rigid rail or cable. Should a fall occur the device is designed to lock by inertia or cam action to arrest the fall.

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.

Leading Edge: The unprotected side and edge that exposes a worker to a fall hazard. It means the edge of a floor, roof, or formwork for a floor or other walking/working surfaces.

Lifeline (LL): A component consisting of a flexible line for connecting to an anchorage at one end, to hang vertically, or for connection to anchorage 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.

Maximum Arresting Force: The peak force exerted on the body or test weight when a fall protection system stops a fall.

Parapet: A low protective railing or wall along the edge of a roof.

Personal Fall Arrest System: A system used to arrest an employee in a fall from a working level. It consists of an anchorage system, connecting means, body harness, and may include a lanyard, deceleration device, lifeline, or suitable combination of these.

Platforms: Any elevated surface designed or used primarily as a walking or working surface. Other elevated surfaces upon which employees are required or allowed to walk or work while performing assigned tasks on a predictable and regular basis.

Positioning Belt: A single or multiple straps that can be secured around a worker's body to hold the user in a work position.

Positioning Device System: A combination of equipment that permits the user to have both hands-free while being supported on an elevated vertical surface.

Predictable and Regular Basis: Means employee functions such as, but not limited to, inspections, service, repair, and maintenance which are performed: (a) At least once every 2 weeks, or (b) For a total of 4 manhours or more during any sequential 4-week period (e.g., 2 employees once every 4 weeks for 2 hours: 4 man-hours per 4- week period).

Qualified Person (QP) for Fall Protection: A person with a recognized degree or professional certificate, and with extensive knowledge and experience in the subject field of fall protection, who is capable of performing design, analysis, evaluation and specifications in fall protection systems and equipment.

Rollout: An action by which a snap-hook or carabiner unintentionally disengages from the component to which it is attached.

Rope Access: A rope access suspended system consisting of 2 lifelines independently anchored at the top to protect the authorized person from falling. The ropes directly suspend the person. The technique is used on buildings, bridges, and other structures for conducting inspection, cleaning, and painting.

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

Sag: The distance the wire rope deviates from the horizontal plane established by the end anchor points. This is defined by the line between 2 anchor points and measuring downward at the midpoint of the wire rope.

Self-Retracting Lanyard (SRL): A deceleration device containing a drum-wound line that 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.

Shock Absorber: A component of a fall protection system that dissipates energy by deformation or extending the deceleration distance.

Slide Guard: Designed to prevent employees from sliding off a sloped roof to a lower level and consists of manufactured roof brackets used in conjunction with dimensional lumber or may be a site-built system of similar design and dimension.

Snap-hook: A connector comprised of a hook-shaped body with a normally closed gate or similar arrangement, which may be opened to permit the hook to receive an object and when it is automatically released, closes to retain the object. Only self-locking (single or double locking) snap hooks are acceptable for use.

Swing Fall: A pendulum-like motion that can result from moving horizontally away from, or toward, a fixed anchorage when falling. Swing falls generate the same amount of force when falling the same distance vertically. Swing fall has the hazards in both the horizontal (swinging into an obstruction) and vertical (falling onto obstructions or the ground) directions.

Toe-Board: A deck level protective barrier that will prevent the fall of materials and equipment to lower levels.

Total Fall Distance: The vertical distance between the anchorage location and connecting point on the body (generally, the harness D-ring) after the fall is arrested, which includes the free fall and deceleration distances.

Vertical Lifeline (VLL): A vertical suspended flexible line connected at the upper end to an overhead anchorage and along which a fall arrester travels.

Warning Line System: A barrier erected on a roof to warn workers that they are approaching an unprotected roof, side, or edge and which designates an area where roofing work may take place without the use of guardrail, body harness or safety net system to protect workers in the area. Work performed outside barriers will require fall protection systems. The difference between CAZ and Warning Line systems is that in the CAZ, approved anchorages cannot be provided to tie off the worker.

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, form work, and concrete reinforcing steel (not including ladders, vehicles, or trailers), on which employees must be located in order to perform their job duties.

APPENDIX C – ANNUAL GSO REVIEWS

DATE	REVIEWED BY	CHANGES Y/N	SUMMARY OF CHANGES
	MASNICK.GREGORY.SEAN.1058383160 Digitally signed by MASNICK.GREGORY.SEAN.1058383160 Date: 2024.10.29 15:07:56 -04'00'		