

DEPARTMENT OF THE ARMY
HEADQUARTERS, U.S. ARMY MEDICAL DEPARTMENT CENTER AND SCHOOL
AND FORT SAM HOUSTON
Fort Sam Houston, Texas 78234-5014

Memorandum
Number 385-15

1 October 2000

Safety
FALL PROTECTION PROGRAM

1. PURPOSE. To provide Fort Sam Houston (FSH) and contractor personnel with guidance designed to prevent personnel from falling off, onto, or through working levels and to protect employees from being struck by falling objects in accordance with Occupational Safety and Health Administration (OSHA) Fall Protection requirements.

2. APPLICABILITY. This memorandum applies to all military, civilian, and contractor personnel assigned, or attached to Fort Sam Houston (FSH) to include Camp Bullis and Canyon Lake (collectively referred to in this memorandum as FSH).

3. REFERENCES.

a. OSHA Standard 29 CFR §1926, Subpart M [1926.501(a), 1926.502, and 1926.503], Fall Protection.

b. OSHA Standard 29 CFR §1926 (Subpart L), Scaffolds.

c. OSHA Standard 29 CFR §1926.104, Safety Belts, Lifelines, and Lanyards.

d. OSHA Standard 29 CFR §1926.105, Safety Nets.

e. FSH Regulation 385-10, Occupational Safety and Health Program.

4. EXPLANATION OF TERMS. Definitions and specific terminology associated with fall protection are contained in Appendix A. Additionally, many of the referenced standards are available on the INTERNET which can be accessed through the Installation Safety Office's WEB PAGE - www.cs.amedd.army.mil/iso/

5. POLICY.

a. Fall protection is required in areas or activities to include, but not limited to, ramps, runways and walkways, excavations, hoist areas, holes, formwork and reinforcing steel,

leading edge work, overhand bricklaying, and related work, unprotected sides and edges, roofing work, precast concrete erection, wall openings, etc. The threshold height that determines if fall protection is required is six feet (1.8 meters) or more above a lower level or when personnel are exposed to the hazard of falling into dangerous equipment. Exception: certain scaffold operations, ref 1926 Subpart L, 1926.451 [(g) and (h)]. All affected personnel will be provided with:

(1) Fall protection systems and procedures selected as appropriate for all given situations.

(2) Fall protection systems shall meet or exceed appropriate American National Standards Institute (ANSI) Standards.

(3) Proper construction and installation of safety systems, such as guardrail systems, safety net systems, personal fall arrest systems, positioning device systems, and warning line systems, control line systems, covers, travel restrictions, etc.

(4) Safe work procedures to be followed and personnel properly supervised as outlined in this memorandum.

(5) Training in the proper selection, use and maintenance of fall protection systems and procedures.

b. This memorandum does not apply to those individuals assigned to inspect, investigate, or assess workplace conditions prior to the actual start of work or after all work has been completed. However, all safety precautions and procedures shall be followed where feasible.

6. BACKGROUND. According to OSHA, "Each year, on average, between 150 and 200 workers are killed and more than 100,000 are injured as a result of falls at construction sites." Unstable working surfaces, misuse or lack of fall protection equipment, and human error are factors that contribute to most of these accidents. It has been proven that the use of fall protection systems will prevent many deaths and injuries from falls.

7. RESPONSIBILITIES.

a. The Installation Safety Office (ISO) will:

(1) Serve as the proponent for the Fall Protection Program.

(2) Assist in the training/qualification of FSH competent person(s).

(3) Conduct spot checks of construction site operations.

(4) Attend preconstruction meetings and review contracts to ensure fall protection safety plans have been included where required.

b. Preventive Medicine will:

(1) Assist in potential hazardous atmosphere evaluations, as appropriate.

(2) Assist in the conduct of hazard assessment and job hazard analysis, as appropriate.

c. Commanders/Organization Chiefs, of personnel who require fall protection, will:

(1) Provide resources to procure equipment required for fall protection where required by this memorandum.

(2) Provide resources for training of personnel.

(3) Report all incidents involving falls on FSH Form 96-E, Accident/Incident/Near Miss Report.

(4) Establish local procedures for fall protection for their personnel (see paragraph 9).

d. Supervisors will:

(1) Ensure only trained individuals are assigned the duties of a competent person at operations.

(2) Enforce fall protection policies and procedures, along with the competent person.

e. Employees will:

(1) Use fall protection provided in accordance with this memorandum.

(2) Immediately report unsafe conditions to their supervisor/competent person.

8. TRAINING.

a. Supervisor must determine the fall protection training requirements/qualifications for their personnel based on the use of job hazard analysis or risk assessment. Job hazard analysis will be documented on a CSFS Form 97-E, Job Hazard Analysis.

b. Employees who may be exposed to fall hazards must be

trained on the following areas:

- (1) Nature of fall hazards in work area.
- (2) Correct procedures for erecting, maintaining, disassembling, and inspecting fall protection systems.
- (3) Use and operation of controlled access zones, guardrails, personal fall arrest, safety net, warning lines, and safety monitoring systems.
- (4) Role of each employee in the safety monitoring system when the system is in use.
- (5) Limitations on the use of mechanical equipment during the performance of roofing work on low-slope roofs.
- (6) Correct procedures for equipment and materials handling and storage and erection of overhead protection.
- (7) Employees' role in fall protection plans.
- (8) Requirements of 1926 Subpart M and this memorandum.

c. Certification will be documented on FSH Form 98-E, Occupational Safety and Health Training Record. Retraining shall be provided as necessary.

d. Supervisors shall appoint and ensure competent personnel have been trained on how to recognize fall hazards and eliminate or minimize such hazards.

9. OPERATING PROCEDURES.

a. Before any work begins, supervisors must select the fall protection system appropriate for any given situation, use proper construction and installation of safety systems, supervise employees properly, enforce safe work procedures, and train their employees in the proper selection, use and maintenance of fall protection systems.

b. Employees will not be permitted to work on surfaces until it has been determined that the surface has the requisite strength and structural integrity to safely support affected personnel.

c. Fall protection systems serve two basic functions: They restrain (prevent) a worker from falling or they arrest (safely stop) a worker who experiences a fall.

d. OSHA includes six fall protection systems in 1926 Subpart M.

(1) Guardrail systems, safety net systems, and personal fall arrest systems, are conventional systems with the widest range of applications for a large variety of tasks.

(2) Positioning device systems, warning line systems, and safety monitoring systems have a more specialized application. Positioning device systems are used primarily for construction workers when performing form work and reinforcing steel work. Warning line and safety monitoring systems have specific applications for roofing operations on low slope roofs. Safety monitoring systems are used when conventional fall protection systems are not feasible and no alternative measures have been implemented. It must be noted that the safety-monitoring system is the *least desirable* and will not provide a physical means of preventing or arresting a fall.

e. Guardrails:

(1) Top rails and midrails must be at least one-quarter inch (0.6 cm) nominal diameter or thickness to prevent cuts or lacerations. Systems shall be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.

(a) If wire rope is used for top rails, it must be flagged at not more than 6 ft (1.8 m) intervals with high visibility material. Steel or plastic banding cannot be used for top or mid rails. Manila, plastic, or synthetic rope used for top or mid rails will be inspected as frequently as necessary to ensure strength and stability.

(b) Ends of top or mid rails will not overhang terminal posts, except where such an overhang does not constitute a projection hazard.

(c) Top edge height of top rails (or equivalent guardrails) must be 42 inches (1.1 m) plus or minus 3 inches (8 cm) above a walking surface. If stilts are used, the height of the top rail must be increased to amount equal to the height of the stilts.

(d) Guardrail system must be capable of withstanding a force of at least 200 pounds applied within 2 inches of the top edge in any outward or downward direction. When the test is applied in a downward direction, the top edge must not deflect to height less than 39 inches (1 m) above the walking/working level (3 inch deflection allowed).

(2) Screens, midrails, mesh, intermediate vertical members, or equivalent intermediate structural members must be installed between the top edge of the guardrail system and the

walking/working surface when there are no walls at least 21 inches (53 cm) high.

(a) When midrails are used, they must be installed at a height midway between the top edge of the guardrail and the walking/working level.

(b) When screens or mesh are used, they must extend from the top rail to the walking/working level and along the entire opening between the top rail supports.

(c) Intermediate members, such as balusters, when used between posts, shall not be more than 19 inches (48 cm) apart.

(d) Other structural members, such as additional midrails and architectural panels, shall be installed so that there are no openings in the guardrail system more than 19 inches (48 cm).

(e) Midrails, screens, mesh, intermediate vertical members, solid panels, or equivalent must be capable of withstanding a force of 150 pounds applied in any downward or outward direction at any point along the midrail or other member.

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

(4) At holes, guardrail system must be set up on all unprotected sides or edges. When holes are used for the passage of materials, the hole shall not have more than two sides with removable guardrail sections.

(a) When the hole is not in use, it must be covered or provided with guardrails along all unprotected sides or edges.

(b) If guardrails are used around holes that are used as access points (such as ladder ways), gates must be used or the point of access must be offset to prevent accidental walking into the hole.

(5) If guardrails are used at unprotected sides or edges of ramps and runways, they must be erected on each unprotected side or edge.

f. Safety Net Systems: Safety net systems must be installed as close as practical under the walking/working surface on which employees are working and never more than 30 feet (9.1 m) below

such levels. The use of safety nets at FSH will only be by exception and then only after the ISO has approved the fall protection plan.

g. Personal Fall Arrest Systems: This system consists of an anchorage, connectors, and a body harness and may include a deceleration device, lifeline, or suitable combination.

(1) A personal fall arrest system must:

(a) Limit maximum arresting force on an employee to 1,800 pounds with a body harness.

(b) Be rigged so that an employee can neither free fall more than 6 ft (1.8 m) nor contact any lower level.

(c) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 ft (1.07 m).

(d) Have sufficient strength to withstand twice the potential impact energy of an employee free falling a distance of 6 ft (1.8 m) or the free fall distance permitted by the system, whichever is less.

(2) Personal fall arrest systems shall be inspected prior to each use for wear damage or other deterioration. Defective components will be removed from service.

(3) Dee-rings and snap hooks shall have a minimum tensile strength of 5,000 pounds, and a minimum tensile load of 3,600 pounds, without cracking, breaking or suffering permanent deformation.

(4) Snap hooks shall be sized to be compatible with the member to which they will be connected and shall be of a locking configuration.

(5) On suspended scaffolds or similar work platforms with horizontal lifelines that may become vertical lifelines, the devices used to connect to a horizontal lifeline shall be capable of locking in both directions on the lifeline.

(6) Ropes and straps (webbing) used in lanyards, lifelines and strength components of body harnesses shall be made of synthetic fibers and must meet tensile strength and load requirements.

(7) Anchorages shall be designed, installed and used under the supervision of a qualified person, as part of a

complete personal fall arrest system that maintains a safety factor of at least two, i.e. capable of supporting at least twice the weight expected to be imposed upon it.

(a) Anchorages used in personal fall arrest systems shall be independent of any anchorage being used to support or suspend platforms.

(b) Anchorage must be capable of supporting at least 5,000 pounds per person attached.

h. Fall Prevention Device System: Body harness set up so that a worker is prevented from falling. The length of the tether can be no longer than that which will allow movement to the edge of the platform or working surface. The purpose of the fall protection device system is to prevent the fall from occurring; therefore, free fall control is not necessary. The tie-off point must be capable of withstanding a tensile impact of twice the total weight of the individuals connected to the tie-off point.

i. Positioning Device System: Body belt or body harness set up so that a worker can free fall no more than 2 feet (0.6 m). Secured to an anchorage capable of supporting at least twice the potential impact load of an employee's free fall or 3,000 pounds whichever is greater. Requirements for snap hooks, dee-rings, and other connectors used with positioning device systems must meet the same criteria as those for personal fall arrest systems.

j. Warning Line Systems:

(1) Warning line systems consist of ropes, wires, or chains, and supporting stanchions. These systems can only be used on flat roofs.

(a) Flagged at not more than 6 ft (1.8 m) intervals with high visibility material.

(b) Rigged and supported so that the lowest point (including sag) is not less than 34 inches (0.9 m) from the walking/working surface and the highest point is not more than 39 inches (1 m) from the walking/working surface.

(c) Stanchions, after being rigged with warning lines, shall be capable of resisting, without tripping over, a force of at least 16 pounds applied horizontally against the stanchions, 30 inches (0.8 m) above the walking/working surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge.

(d) The rope, wire, or chain shall have a minimum

tensile strength of 500 pounds and after being attached to the stanchions, must support without breaking the load applied to the stanchions as prescribed above.

(e) Shall be attached to each stanchion in such a way that pulling one section of the line between the stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over.

(2) Warning lines shall be erected around all sides of roof work areas. When mechanical equipment is being used, the warning lines shall be erected not less than 6 ft (1.8 m) from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 ft (3 m) from the roof edge perpendicular to the direction of the mechanical equipment operation.

(3) When mechanical equipment is not being used, the warning line must be erected not less than 6 ft (1.8 m) from the roof edge.

k. Safety Monitoring Systems:

(1) This system is used when no other alternative fall protection is feasible. Supervisor must appoint a competent person to monitor the safety of workers and shall ensure that the safety monitor is:

(a) Competent in recognition of fall hazards.

(b) Capable of warning workers of fall hazard dangers and in detecting unsafe work practices.

(c) Operating on the same walking/working surfaces of the workers and can see them.

(d) Close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.

(2) No worker, other than one engaged in roofing work (on low-sloped roofs) or one covered by a fall protection plan, shall be allowed in an area where an employee is being protected by a safety monitoring system.

(3) Mechanical equipment shall not be used or stored in areas where safety monitoring systems are being used to monitor employees engaged in roofing operations on low-sloped roofs.

(4) All workers in this controlled access zone shall be instructed to promptly comply with fall hazard warnings issued by

safety monitors.

1. Controlled Access Zones (CAZ) are used to keep workers other than those authorized to enter work areas from which guardrails have been removed. For example, masons would be the only workers allowed in a CAZ.

(1) Control lines will consist of ropes, wires, tapes or equivalent materials, and supporting stanchions, and each must be:

(a) Flagged or otherwise clearly marked at not more than 6 foot (1.8 meters) intervals with high visibility material.

(b) Rigged and supported such that the lowest point (including sag) is not less than 39 inches (1 m) from the walking/ working surface and the highest point is not more than 45 inches (1.3 m) - nor more than 50 inches when overhand bricklaying operations are being performed.

(c) Strong enough to sustain stress of not less than 200 pounds.

(d) Control lines shall extend along the entire length of the unprotected or leading edge and shall be approximately parallel to the unprotected or leading edge.

(e) Control lines must be connected on each side to a guardrail system or wall.

(2) Control lines shall be erected not less than 6 feet (1.8 m) nor more than 25 feet (7.6 m) from the unprotected or leading edge, except when precast concrete members are being erected. For precast concrete work - control line is not less than 6 feet nor more than 60 feet (18 m) or half the length of the member being erected, whichever is less, from the leading edge.

(3) For overhand bricklaying and related work the control line will not be less than 10 feet (3 m) nor more than 15 feet (4.6 m) from the working edge. On floors and roofs where guardrail systems are not in place prior to beginning work - CAZ will be enlarged as necessary to enclose all points of access, material handling areas, and storage areas. If a guardrail system is in place, only that portion of the guardrail necessary to accomplish that day's work shall be removed.

m. Employees at excavations shall be protected from falling by guardrails, fences, barricades, or covers. Where walkways are provided, guardrails are required on the walkway if the fall is 6 feet (1.8 m) or more to the lower level.

n. Formwork and Reinforcing Steel: For employees, while moving vertically and/or horizontally on the vertical face of rebar assemblies built in place, fall protection is not required when employees are moving. OSHA considers the multiple hand and foot holds on the rebar assemblies as providing similar protection as that provided by a fixed ladder. However, an employee must be provided with fall protection when climbing or otherwise moving at a height more than 24 ft (7.3 m), the same for fixed ladders.

o. Hoist Areas: If a guardrail system (or chain gate or guardrail) or portions thereof must be removed to facilitate hoisting operations, as during the landing of materials, and a worker must lean through the access opening or out over the edge of the access opening to receive or guide equipment and materials, that employee must be protected by a personal fall arrest system.

p. Holes: Personal fall arrest systems, covers, or guardrail systems shall be erected around holes (including skylights) that are more than 6 ft (1.8 m) above lower levels.

q. Covers: Covers located in roadways and vehicular aisles must be able to support at least twice the maximum axle load of the largest vehicle to which the cover might be subjected. All other covers must be able to support at least twice the weight of employees, equipment, and materials that may be imposed on the cover at any one time. To prevent accidental displacement resulting from wind, equipment, or workers' activities, all covers must be secured. All covers shall be color-coded or bear the markings "HOLE" or "COVER".

r. Leading Edges: Employees constructing leading edges 6 ft (1.8 m) or more above a lower level shall be provided fall protection. If the supervisor can demonstrate that fall protection is not feasible or that a greater hazard would be created, he/she must develop and implement a fall protection plan that meets the requirements of 29 CFR 1926.502 (k).

s. Protection From Falling Objects: When guardrail systems are used to prevent materials from falling from one level to another, any openings must be small enough to prevent passage of potential falling objects. No materials or equipment except masonry and mortar shall be stored within 4 ft (1.2 m) of working edges. Excess mortar, broken or scattered masonry units, and all other materials and debris shall be kept clear of the working area by removal at regular intervals. For roofing work, materials/equipment shall not be stored within 6 ft (1.8 m) of the roof edge unless guardrails are erected at the edge, and materials piled, grouped, or stacked near a roof edge must be

stable and self-supporting.

(1) When used as protection from falling objects, canopies must be strong enough to prevent collapse and to prevent penetration by any objects that may fall onto them.

(2) When toe boards are used for protection from falling objects, they must be erected along the edges of the walking/working surface and of sufficient distance to protect personnel working below.

(a) Toe boards shall be capable of withstanding a force of at least 50 pounds applied in any outward or downward direction at any point.

(b) Toe boards shall be a minimum of 3.5 inches (9 cm) tall from their top edge to the level of the walking/working surface, have not more than 0.25 inches clearance above the walking/working surface, and be solid or have openings not larger than one inch (2.5 cm) in size.

(c) Where tools, equipment, or materials are piled higher than the top edge of a toe board, paneling or screening must be erected from the walking/working surface or toe board to the top of the guardrail system's top or mid rail, for a distance sufficient to protect employee below.

t. Low Slope Roof: On roofs 50 feet (15.25 m) or less in width, the use of a safety monitoring system without a warning line system is permitted.

u. Steep Roofs: Employees on a steep roof with unprotected sides and edges 6 ft (1.8 m) or more above lower levels shall be protected by either a guardrail system with toe boards, a safety net system, or a personal fall arrest system.

v. Any deviation to this memorandum or 1926 Subpart M must be approved in writing by the ISO before any work is performed.

APPENDIX A
GLOSSARY OF TERMS

Anchorage: A secure point of attachment for workers' lifelines, lanyards, or deceleration devices. Anchorages must be capable of supporting a minimum breaking strength of 5,000 pounds per worker (designed, installed, and used under the supervision of a qualified person, as part of a complete personal fall arrest system that maintains a safety factor of at least two).

Body Belt (Safety Belt): A strap that cinches around a person's waist and attaches to a lanyard, lifeline, or deceleration device. The maximum safe arresting force for a body belt is 900 pounds. Effective 1 Jan 98, body belts are not acceptable as part of a personal fall arrest system. However, use of the body belt in a *positioning device system* is acceptable and is regulated under para (e) of Subpart M, 1926.502. Notwithstanding, body belts will not be used at FSH except in association with ladder safety device as part of the full prevention system.

Body Harness: Straps that may be secured about the person in a manner that distributes the fall arrest forces over at least the thighs, pelvis, waist, chest, and shoulders with a means of attaching the harness to other components of a personal fall arrest system. The maximum safe arresting force for a body harness is 1,800 pounds.

Carrier: The track of a ladder safety device consisting of a flexible cable or rigid rail secured to a ladder or structure by mountings.

Competent Person: An individual who can identify hazardous conditions and appropriate applications for a fall protection system, and is authorized to take corrective actions.

Connector: A device that is used to couple (connect) parts of a personal fall arrest system or positioning device system together. This can be an independent component (such as a carabineer) or an integral component (such a buckle or deeming sewn into a body belt) of a system. Connectors must be drop forged or made of equivalent material, be made of corrosion-resistant finish, and have all surfaces and edges smooth to prevent damage to other parts of the system.

Controlled Access Zone (CAZ): A designated work area, clearly marked, in which certain types of work (such as overhead

bricklaying or leading edge construction) may take place without the use of conventional fall protection systems - guardrails, personal arrest or safety net. Access is restricted to all workers except those performing the required tasks.

Covers: Rigid object used to overlay openings in floors, roofs, roadways, and other walking/working surfaces.

Deceleration Device: Any mechanism that dissipates or otherwise limits energy imposed on a person during fall arrest. Examples include - rope, grabs, rip stitch lanyard, specially woven lanyard, tearing or deforming lanyards, automatic self-retracting lifelines/lanyards.

Deceleration Distance: The additional vertical distance a worker falls before stopping-excluding lifeline elongation and free-fall distance- from the point at which a deceleration device begins to operate. The distance is measured from the worker's body belt or harness attachment point just before the device activates to the attachment point after the worker comes to a full stop.

Dee-rings: Attachment points on a body belt or harness for deceleration devices or lanyards. Dee-rings must be capable of sustaining a minimum tensile load of 5,000 pounds.

Force Factor: The ratio, under identical conditions, of the arresting force on rigid metal object to the arresting force on a human body or equal weight.

Free Fall Distance: Vertical distance a worker falls before personal fall arrest system stops the fall. Excludes deceleration distance, lanyard and lifeline elongation, but includes deceleration device slide distance or self-retracting lifeline/lanyard extension before fall arrest forces occur.

Guardrail System: Vertical barriers, consisting of top rails, midrails, and intermediate structural members such as balusters, erected to prevent workers from falling to lower level.

Hole: Any opening more than two inches (5.1 cm) or more in a floor, roof, or other walking/working surface.

Infeasible: Describes a situation in which it is not possible to perform construction work using a conventional fall protection system.

Horizontal Lifeline: A flexible horizontal cable or rope line anchored at both ends that attaches to a worker's body belt or harness. Horizontal lifelines must be designed, installed and used under the supervision of a qualified person, as part of complete personal fall arrest system.

Lanyard: A flexible line of rope, wire rope, strap or webbing that connects a body belt or harness to a deceleration device, lifeline, or anchor. Lanyards that tie-off one worker must have a minimum breaking strength of 5,000 pounds. Lanyards that automatically limit free-fall distance of two feet or less must have components capable of sustaining a minimum static tensile load of 3,000 pounds with the lanyard in the fully extended position.

Leading Edge: The edge of a floor, roof, formwork, or other walking/working surface (such as a deck) that changes location as additional sections are placed, formed or constructed. Leading edges not actively under construction are considered "unprotected sides and edges".

Lifeline: A flexible line that attaches directly to a person's body belt, harness, lanyard, or deceleration device at one end and to an anchor at the other end. A lifeline that hangs vertically and is connected to one anchor is a vertical lifeline (See horizontal lifeline). All lifelines must be protected against cuts or abrasions; they cannot be made of natural fiber rope.

Low-Slope Roof: A roof with a slope less than or equal to 4 in 12 (vertical to horizontal ratio).

Lower Levels: Surfaces to which a worker can fall, such as ground levels, floors, ramps, runways, excavations, pits, tanks, material, water and equipment.

Opening: Any clearance 30 or more inches high and 18 inches or more wide in a wall or partition through which workers could fall to a lower level.

Personal Fall Arrest System: A conventional fall protection system designed to stop a single worker from free falling to a lower level. Components include an anchorage, connectors, a body belt, or body harness, and may include a lanyard, deceleration device, or lifeline. As of 1 Jan 98, body belts for fall arrest are prohibited.

Positioning Device System: A body belt or body harness type of personal fall protection system that supports a person on an elevated vertical surface, such as a wall, so that they may work with both hands free on surfaces while leaning backwards. Also used for form work construction and concrete rebar placement.

Rope Grab: A deceleration device that travels on a lifeline; it automatically (by friction) engages and locks on the lifeline in the event of a fall.

Safety Monitoring System: A fall protection system that requires a monitor (competent person) to be responsible for recognizing fall hazards and warning workers when they are at risk of falling.

Safety Net System: A fall arrest system of mesh nets, including panels, connectors, and other impact-absorbing components.

Self-retracting lifeline/lanyard: A deceleration device consisting of a drum-wound line that retracts or extends from the drum with normal worker movements in the event of a fall - the drum automatically locks. Must be capable of sustaining a minimum tensile load of 3,000 pounds in the fully extended position if they automatically limit free-fall distance to two feet or less. Self-retracting lifelines that do not limit free-fall distance to two feet or less must be capable of sustaining a minimum tensile load of 5,000 pounds in the fully extended position.

Snap hook: A connector consisting of a hook-shaped member and a keeper; can be opened to receive an object and, when released, automatically closes to retain the object. There are two types of snap hooks: The locking type has a self-closing, self-locking keeper that remains closed and locked until unlocked. The non-locking type has a self-closing keeper that remains closed until pressed open. Snap hooks must be capable of sustaining a minimum tensile strength of 5,000 pounds. As of 1 Jan 98, use of non-locking snap hooks as part of personal fall arrest systems and positioning device systems is prohibited.

Steep Roof: A roof having a slope greater than 4 in 12 (vertical to horizontal ratio).

Toe board: A low protective barrier that prevents materials, equipment, and personnel from falling to lower levels.

Unprotected Sides and Edges: Any side or edge (except at entrance point accesses) of a roof, floor, ramp, or runway that lacks a wall or guardrail at least 39 inches (1 meter) high.

Walking/working Surfaces: Any surface (except on ladders, vehicles, or trailers) on which workers perform tasks or jobs.

Warning Line System: A barrier erected on a roof to warn workers they are approaching an unprotected edge. Designates an area for roofing work without conventional fall protection - guardrail, safety net, or personal fall arrest-systems.

AMEDDC&S & FSH Memo 385-15

(MCCS-BPM-S)

FOR THE COMMANDER:

OFFICIAL:

/S/
LUCY S. PEREZ
Secretary of the General Staff

/S/
MICHAEL J. REDWINE
MAJ, AG
Adjutant General

DISTRIBUTION:
A, B, Plus:
30 - MCCS-BHR-AS
Plus: All Garrison Activities