

Department of the Army  
Pamphlet 385-10

Safety

# Army Safety Program

**Rapid Action Revision (RAR) Issue Date: 5 August 2009**

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# ***SUMMARY of CHANGE***

DA PAM 385-10  
Army Safety Program

This rapid action revision, dated 5 August 2009--

- o Adds procedure on the Army Excellence in Explosive Safety Award (para 6-3i).
- o Makes administrative changes (throughout).

## Safety


### Army Safety Program

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By Order of the Secretary of the Army:

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**History.** This publication is a rapid action revision (RAR). The portions affected by this RAR are listed in the summary of change.

**Summary.** This pamphlet prescribes Army policy on safety and occupational health issues. It implements the safety requirements of AR 385–10 and other Federal regulations and laws.

**Applicability.** This pamphlet applies to the Active Army, the Army National

Guard/Army National Guard of the United States, and the U.S. Army Reserve, unless otherwise stated. It also applies to all active duty Army military personnel at any time, on or off a DOD installation; to all Army civilian personnel in a duty status, on or off a DOD installation; and to all persons at any time on an Army installation. During mobilization, the proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the

**Proponent and exception authority.**

The proponent for this pamphlet is the Chief of Staff, Army. The proponent has the authority to approve exceptions to this pamphlet that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior legal officer. All waiver requests will be endorsed by the

commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

**Suggested improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Director of Army Safety (DASAF), 223 23rd St., Room 980, Arlington, VA 22202.

**Distribution.** This publication is available in electronic media only and is intended for command levels A, B, C, D, and E for the Active Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve.

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\*This pamphlet supersedes DA Pam 385–10, dated 24 August 2007. This edition publishes a rapid action revision of DA Pam 385–10.

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### Glossary

## **Chapter 1**

### **General**

#### **1-1. Introduction**

Throughout this pamphlet, the term “command” includes Army Commands (ACOMs), Army Service Component Commands (ASCCs), Direct Reporting Units (DRUs), National Guard Bureau (NGB), Field Operating Agencies, and Staff Supporting Agencies.

*a.* This pamphlet establishes mandatory guidance, functions, policies and procedures for the Army’s Safety Program. The goal of this pamphlet and subsequent programs is to reduce the risk of death or injury to Soldiers and civilians, and damage to vehicles, equipment and property due to accidents.

*b.* This pamphlet also establishes requirements for safety and accident prevention programs on Army installations, provides guidance concerning public health and safety laws and regulations, and establishes procedures for compliance with the safety requirements of AR 385–10 and other Army safety and occupational health regulations. This pamphlet is compatible with other Army safety and occupational health pamphlets.

*c.* This pamphlet is organized to provide detailed guidance for selected chapters of AR 385–10. Each section of this pamphlet corresponds with a similar section of the regulation. When a chapter of AR 385–10 is not included in this pamphlet, that chapter has a unique pamphlet that was written to specifically address that topic.

#### **1-2. References**

Required and related publications and prescribed and referenced forms are listed in appendix A.

#### **1-3. Explanation of abbreviations and terms**

Abbreviations and special terms used in this pamphlet are explained in the glossary.

#### **1-4. Functions**

Army Safety Program functions required of Army organizations are addressed in AR 385–10.

#### **1-5. Objectives**

This pamphlet provides guidance on how to implement improved safety procedures and processes for the subject areas included in this pamphlet. This pamphlet provides guidance in recognizing units and individuals that make outstanding contributions to accident prevention efforts and acts. Through the implementation of this pamphlet, the safety and health of Army personnel, dependents and surrounding community will be improved.

#### **1-6. Funding**

Each organization will include funding at the level required for full implementation of the Army Safety Program, the Army Accident Prevention Awards Program and other requirements of this pamphlet in their budget submissions.

## **Chapter 2**

### **Goals and Strategic Planning**

#### **2-1. Introduction**

*a.* The first step in developing and implementing a vigorous safety program is to identify strategic goals and the plans required to achieve those goals, as required in AR 385–10, chapter 2.

*b.* Goals for safety must be part of the command/organization’s mission objectives. Safety goals will support overall command objectives by helping keep personnel safe and ready for duty. Through strategic planning each organization, from Headquarters Department of the Army (HQDA) to ACOMs to the lowest level can determine what its goals for safety should be, and how best to achieve these goals.

*c.* Strategic planning and goal setting has several benefits.

(1) First, by establishing realistic goals and the plan(s) to achieve these goals the entire organization is oriented in the same direction. Disjointed operations, actions that do not contribute to plan implementation and goal achievement are controlled and eliminated, reducing waste of limited personnel and resources on nonproductive operations.

(2) Second, the process of establishing goals and strategic plans is positive since it should bring together all elements of the command/organization. Through working together to identify what is necessary for the command/organization to support Army safety goals and the associated plans, each element has improved understanding of its role in safety and occupational health and how each is essential to promoting overall objectives.

(3) Third, by determining the overall strategy, the allocation of resources can be more efficiently managed. Personnel and programs can be applied to those areas with the greatest return.

## **2-2. Establishing appropriate safety goals**

Safety goals are established by determining the requirements placed on the command/organization by higher-level organizations (that is, Army goals), internal requirements, and what is needed to serve customers (for example, other commands and organizations). Therefore, effective goals to achieve safe operations will be focused on the organization's mission.

*a.* The Strategic Safety Plan (SSP) will use the Strategic Readiness Score Card (SRS) System used by the Deputy Chief of Staff, G-3/5/7 (DCS, G-3/5/7) to ensure that safety goals and objectives are consistent with the Army's goals that have been established by the Chief of Staff Army (CSA).

(1) Safety goals will be prioritized to align the highest priority goals with regulatory requirements and with Army goals.

(2) Goals that directly affect the safety of personnel and directly support mission requirements will receive higher priorities.

*b.* Goals that are attuned to an organization's mission, vision, goals, and capabilities are not set in a vacuum. Just as safety is the responsibility of all Army personnel (for example, military, civilians) so is the setting of goals for achieving safe operations, training, and non-duty activities. Safety goals are not set just by the safety office. Each organization within a command should be a full participant in the process. The commander will lead the effort with the safety professional serving as advisor and administrator.

*c.* Each organization within the command will provide input to the safety goal setting process. A safety council/committee, established by the commander and chaired by the commander or his/her Chief of Staff will have representation from organizations/units throughout the command. Tenant organizations and the Army community should also be represented.

*d.* Goals for safety will be as simply stated as possible. Goals will focus on the issue being addressed without excessive and confusing language, being as specific as possible. All goals will have a target date established. By establishing a target date, emphasis is placed on actions to meet the date. Long-term goals should be set high, establishing requirements that are probably beyond immediate achievement, but that can be achieved within a specified period.

*e.* Goals must be measurable. This is required for management to determine if progress is being made toward the goal.

(1) Safety goals will not contradict each other, or the mission of the command and other goals that may have been established.

(2) Goals will always be stated in a positive manner. Positively worded goals place the attention of the command on what is to be accomplished, not on what has gone poorly in the past.

(3) Finally, goals will be directed toward achieving a desired outcome. The goal will support Army readiness by reducing Soldier loss due to accidents, thereby maintaining Soldier and unit readiness.

*f.* Goals must be approved by the commander and the chain of command and promulgated throughout the command. Every person in the command, and when appropriate dependents and contractors will be aware of the goals and their role in achieving each goal. The Safety Office will document the strategic goals and clarifying information, including minutes of meetings and summaries of documents as required.

## **2-3. Developing a strategic safety plan**

*a.* Goals will not be achieved without a strategic plan that sets forth the process for each goal. SSPs are developed the same way that goals are developed, through command action and the involvement of all elements of the command. Each goal will include how the goal will be accomplished. To ensure that a plan is developed that is integrated with the Army operational cycle, planning for the SSP will align with the fiscal year/budget cycle.

(1) Safety goals and SSPs will be developed for the current fiscal year and the next four years of the budget cycle.

(2) One result of the planning process will be identification of funding and personnel requirements to support the plan and goals and preparation of the budget documentation.

*b.* Senior members of the command, representing all command elements will participate in developing the SSP.

## **2-4. Resources**

Leaders, commanders, managers, and supervisors are responsible for ensuring organization SSPs are identified and incorporated into each commands budget and personnel requirements documents to support Army safety goals.

## **2-5. Review and evaluation**

The commander will ensure that the SSP is implemented. This will be accomplished by ensuring that there are action plans (or work plans) for each goal and area of the plan. Specific tasks will be assigned, milestones established and tracked, and progress will be regularly reported to the commander.

*a.* Resource utilization will be part of the reporting process to verify that funds are being applied in a timely and efficient manner to the appropriate tasks. On a quarterly basis, or more frequently if required by the complexity of the plan or as determined by the commander, progress in achieving goals will be reviewed by the commander.



*b.* Any shortfalls in what is required, as identified in the budget and other documents, will be documented along with the projected impact of the shortfall on achievement of safety goals. When safety goals that seriously affect overall Army goals are being breached, the status, reason for the shortcoming, and recommended corrective action will be forwarded to the next level of command.

## **Chapter 3**

### **Army Safety Program Structure**

#### **3-1. Introduction**

An effective safety program requires a safety organizational structure that is capable of implementing Federal, Department of Defense (DOD), ACOMs, installation level, and organizational safety and occupational health (SOH) standards as well as any other requirements to reduce accidental risk to our resources. While each command must organize their safety program to suit the requirements of that command, each safety organization must meet the requirements of this pamphlet.

#### **3-2. Safety and occupational health manager**

*a.* The SOH director is the primary person responsible for planning, developing, coordinating, evaluating, and providing technical consultation for assuring implementation of the command's safety program. The SOH director will meet all requirements of Part 1960, Title 29, Code of Federal Regulations (29 CFR 1960) and DODI 6055.1.

*b.* As a member of the commander's personal staff, the safety director will—

(1) Make independent assessments to assist organizations within the command in integrating Federal, DOD, Army, and organizational requirements to reduce risk of accidental losses.

(2) Have unimpeded access to senior commander to reporting status of safety program and provide safety technical assistance directly to the commander.

*c.* Advise, plan, develop, coordinate, and evaluate the safety program by providing the following functions:

(1) Reports and gives advice to the commander on SOH issues/policy. Assists all elements of the command in the implementation of the SSP in implementing their specific tasks.

(2) Assists all elements of the command in the implementation of the SSP in implementing their specific tasks.

(3) Manages and provides technical oversight of the safety program, including identifying the metrics that best measure progress on implementing the SSP and achieving the command's safety goals.

(4) Develops policy and procedures for integration of SOH, composite risk management (CRM), and accident prevention activities of the command.

#### **3-3. Tailoring the safety organization**

*a.* The safety organization functions are an extension of the commander in the area of SOH.

*b.* The safety organization will include a qualified SOH Director and safety staffs that meet the requirements of CFR 29, 1960 Federal Employee Occupational Safety and Health Program.

*c.* The safety organization is responsible for five core safety functional and sub-functional areas (see app J for detailed task of each sub-function) to assist commanders in mission sustainment.

(1) Safety program management.

(a) Work place safety (Occupational Safety and Health Administration (OSHA)).

(b) System safety.

(c) Radiation safety.

(d) Range safety.

(e) Tactical safety.

(f) Explosive safety.

(g) Chemical agent safety.

(h) Doctrine and leadership development.

(2) Inspection/assessments.

(3) Accident investigation/reporting.

(4) Promotion and awareness.

(5) Hazard analysis and countermeasures.

*d.* Each functional area is administered by a qualified SOH professional qualified in the functional and sub-functional area. In smaller commands/organizations the safety office may have fewer personnel. In these offices, the formal structure must reflect the multiple duties that are performed by each individual.

(1) In addition to performing core safety functions and sub-functions Army safety professionals will perform unique

safety functions, sub-functions, and tasks that will support leader's efforts in integrating safety and composite risk management in organizations missions (see app J).

(2) U.S. Army Installation Management Command (IMCOM) safety professionals will focus on sub-functions and task that support integrating safety and risk management in installation support operations (for example, review operational procedures of facility engineers to ensure safety and CRM in daily operations, and/or provide safety support for installation recreational infrastructure).

(3) U.S. Army Training and Doctrine Command (TRADOC) safety professionals will focus on sub-functions and task that support integrating safety and CRM in doctrine, training and leadership development (for example, review and integrate safety tactics and procedures in Army school curriculums and doctrine).

(4) U.S. Army Forces Command (FORSCOM) safety professionals will focus on sub-functions and task that integrate safety and CRM concepts in tactical operations (for example, review the operation plan (OPLAN) and courses of actions to ensure safety and risk management procedures are apart of mission analysis per FM 5-19).

*e.* The organization chart at figure 3-1 is the standard Army Safety Office Organization. This chart is structured to show the standard safety organization that is required when a command/installation has a mission that encompasses live firing ranges, military and civilian workforce with nonmilitary unique operations, explosive and radiation operations. The mission of the command and any installation tenants determines which functions are required in the safety organization. The magnitude of the mission also influences whether a particular function is required as a separate branch reporting to the SOH director or if the function can be incorporated in another branch or in the situation of smaller organizations, consolidated into the duties of one person not normally requiring a separate branch in the safety office structure.

*f.* In addition to the standard safety organization structure identified in figure 3-1, there is also a requirement for activity safety personnel who perform the safety duty as "other duty as assigned role". This individual should be referred to as the Additional Duty Safety Officer (ADSO) or Collateral Duty Safety Officer (CDSO). This usually occurs in activities where the table of organization and equipment/table of distribution and allowance/modified table of organization and equipment (TOE/TDA/MTOE) based on required functions/task does not support a full time safety officer. The person designated as the ADSO/CDSO will be of sufficient rank to perform these duties normally a commissioned officer/warrant officer at Battalion or higher unit levels; staff sergeant at company or detachment levels; or a Department of the Army (DA) civilian as needed. The person selected must have at least 12 months remaining with the unit after appointment. The appointment will be confirmed in orders designating the unit safety officer by name. The unit safety officer will have received, or will receive training for this position as soon as possible, but no later than 3 months after being appointed the specific area.

*g.* Safety councils/committee are established at each level of command and chaired by commander (see DA Pam 385-1 for procedures).

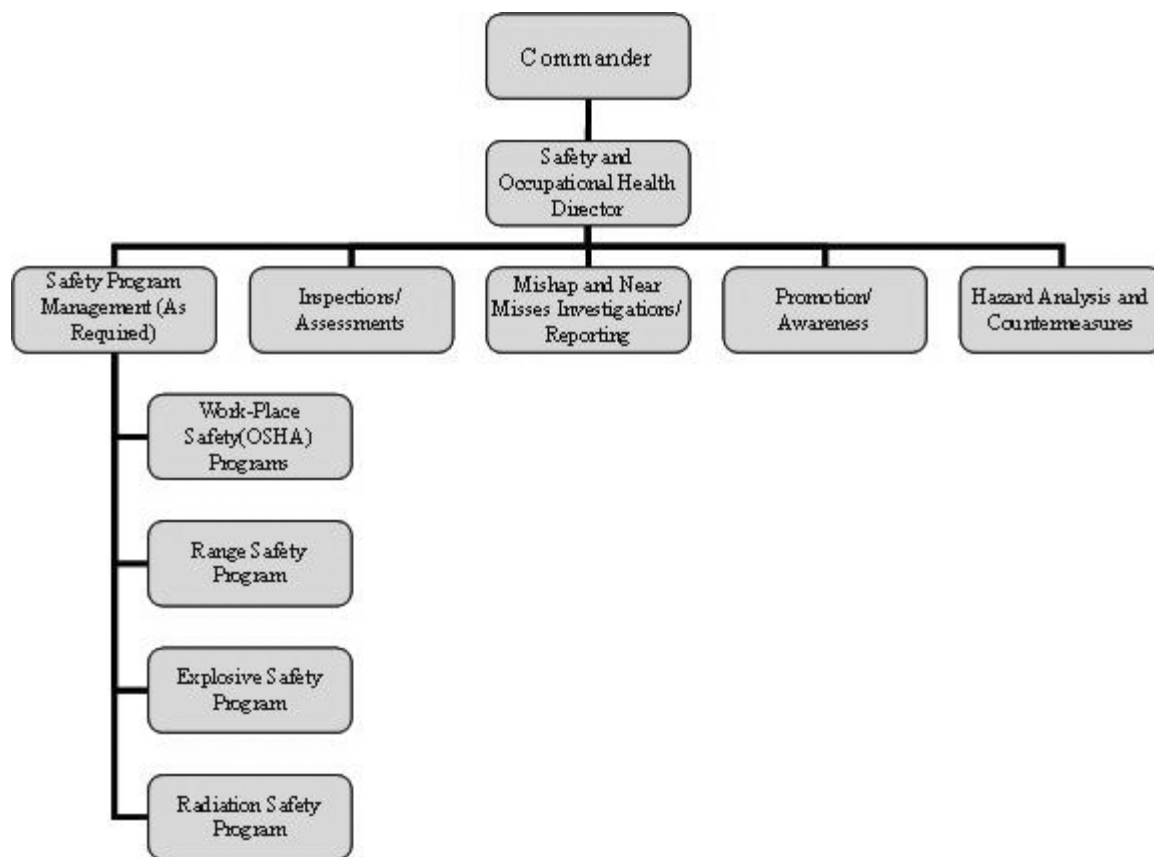


Figure 3–1. Standard core safety structure

### 3–4. Safety staff functions

The standard organizational structural depicted in figure 3–1 provides sub-functional areas. Details for sub-functions, tasks, and cost drivers are located in appendix J. All safety organizations will consist of the five core sub-functions.

### 3–5. Safety labor categories

The Army has established a civilian Safety Career Program (CP) designated as CP–12. The standards for the civilian Safety Career Program are defined in The Safety Management Career Field Management Guide, which is published at <http://cpol.army.mil.library>. Note. Training requirements, career progression and other useful information is contained in this document.

*a.* Career field 12, Safety and Occupational Health Career Program includes—

- (1) GS–0018, Safety and Occupational Health Management.
- (2) GS–0803, Safety Engineer.
- (3) GS–1306, Health Physicist.
- (4) GS–1815, Air Safety Investigator.
- (5) GS–0690, Industrial Hygienist.

(6) The functional chief (FC) is the Deputy Assistant Secretary of the Army (Environment, Safety and Occupational Health), DASA (ESOH). The Office of Personnel Management has established standards for these labor categories. These standards may be found at the Army Civilian Personnel and Office of Personnel Management Web sites, respectively.

*b.* Each labor category is summarized in the table 3–1; however, the most current standards and requirements must be obtained from the referenced Web site.

**Table 3–1  
Safety professional job functions and qualifications**

<b>Positions</b>	<b>Functions</b>	<b>Qualifications</b>
<b>Industrial Hygienists (0690)</b>	Duties are to advise on, administer, supervise, manage, or perform professional and scientific work in industrial hygiene, including the identification and evaluation of conditions affecting the health and efficiency of employees, or the citizens of the adjacent community, the formulation and recommendation of measures to eliminate or control occupational health hazards, and the promotion of occupational health programs for instructing and motivating managers and employees in the prevention as well as correction of potential health hazards.	An industrial hygienist normally holds a degree in engineering, chemistry, or physics or a degree in a closely related biological or physical science from an accredited college or university.
<b>Safety and Occupational Health Manager (0018)</b>	Duties involve the management, administration, or operation of a safety and occupational health program or performance of administrative work concerned with safety and occupational health activities and includes the development, implementation and evaluation of related program functions. The primary objective of this work is the elimination or minimization of human injury and property and productivity losses caused by harmful contact incidents, through the design of effective management policies, programs or practices. Safety and occupational health management work requires application of the knowledge of: (1) the principles, standards, and techniques of safety and occupational health management; and (2) pertinent elements of engineering, physical science, ergonomics, psychology, industrial hygiene, physiology, sociology, and other scientific and technological fields, that contribute to the achievement of comprehensive safety and occupational health objectives.	College degree in an appropriate discipline with relevant experience at the senior management level. Must have a broad knowledge of applicable state and Federal regulations. A practical knowledge of the methods, techniques, and procedures apply by industrial hygienists and environmental and fire prevention engineers is frequently necessary. Should possess safety and occupational health program knowledge, skills, and abilities. Safety and occupational health managers and specialists should have a working knowledge of subject-matter areas such as information systems, fiscal, personnel and property management and the social and physical sciences. The identification and solution of many safety and occupational health problems often requires cooperation with individuals from these fields.
<b>Safety Engineering (0803)</b>	Applies scientific and engineering principles and methods to the elimination and control of hazards resulting from human error, and equipment and machine operations that may lead to injury to persons and damage to property. Safety engineers need to know a lot about many different fields. They specialize in recognition and control of hazards and they work closely with other engineering and non-engineering disciplines	The position requires training in engineering or scientific principles and applications at an accredited college or university. The curriculum must: (1) be in a school of engineering with at least one curriculum accredited by the Accreditation Board for Engineering and Technology (ABET) as a professional engineering curriculum; or (2) include differential and integral calculus and courses (more advanced than first-year physics and chemistry) in five of the following seven areas of engineering science or physics: (a) static's, dynamics; (b) strength of materials (stress-strain relationships); (c) fluid mechanics, hydraulics; (d) thermodynamics; (e) electrical fields and circuits; (f) nature and properties of materials (relating particle and aggregate structure to properties); and (g) any other comparable area of fundamental engineering science or physics, such as optics, heat transfer, soil mechanics, or electronics. The work requires the application of: (a) advanced mathematical techniques; (b) professional engineering principles, methods, and techniques; (c) safety related elements of the physical sciences, ergonomics, psychology and physiology; and (d) safety principles, standards, practices, and analytical techniques.
<b>Health Physicists (1306)</b>	Health physics is a branch of physics concerned with protecting humans and their environments from unwarranted radiation exposure.	Require primarily application of professional knowledge and competence in health physics. Degree: natural science or engineering that includes at least 30 semester hours in health physics, engineering, radiological science, chemistry, physics, biology, mathematics, and/or calculus. In lieu of the degree requirements, a combination of education and experience plus appropriate experience or other education; or certification as a health physicist by the American Board of Health Physics, plus appropriate experience and other education that provided an understanding of sciences applicable to health physics comparable to that described above.

**Table 3-1**  
**Safety professional job functions and qualifications—Continued**

<b>Air Safety Investigating (1815)</b>	Duties include the investigation and prevention of accidents and incidents involving United States aircraft anywhere in the world, and in the establishment of programs and procedures to provide for the notification and reporting of accidents. The investigation includes a report of the facts, conditions, and circumstances relating to each accident and a determination of the probable cause of the accident along with recommendations for remedial action designed to prevent similar accidents in the future. Special studies and investigations on matters pertaining to safety in air navigation and the prevention of accidents are conducted to ascertain what will best tend to reduce or eliminate the possibility of, or recurrence of, accidents.	These duties and responsibilities require the application of a broad technical knowledge in the field of aviation, and experience or training that provides knowledge of investigative techniques and/or legal procedures and practices. Must possess Commercial Pilot Certificate with instrument rating or the appropriate military rating, or other certificate (for example, an Airline Transport Pilot Certificate). Minimum flight hour requirements must be met. Education requirements are a minimum of bachelor's degree with a major study area of aviation, engineering, mathematics, physical sciences, safety, human factors, or other fields related to his position. Personnel must possess a current first or second class medical certificate in accordance with FAA regulations.
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### 3-6. Interface with other organizations

Safety is the responsibility of every leader, Soldier, Family member, civilian employee, and contractor. The safety organization works with other Army and civilian elements to promote safety in the work place and in off duty activities and locations. The command SOH manager/office must work with organizations within and outside the command to achieve safety goals and implement the SSP.

*a.* Within the command, the safety office will—

- (1) Coordinate with other organizations in the development of command safety goals and program.
- (2) Advise other organizations on implementation of the command safety program.
- (3) Provide specific guidance to requests for assistance in resolving problems.
- (4) Promote safety by providing training and educational programs to all of the Army community.
- (5) Provide a safety audit/inspection function for the commander in the area of safety and occupational health.
- (6) Identify units and organizations for exceptional safety performance and achievement.
- (7) Investigate accidents and reports of breach of safe operations and procedures.

*b.* Outside the command, the safety office will—

- (1) Coordinate on safety issues that affect multiple commands and organizations.
- (2) Report command status on implementing the SSP.
- (3) Report progress on achieving safety goals (both internal and external).
- (4) Support Army safety goals and plans through an aggressive safety program.

*c.* The safety office also has an interface with the surrounding community that is directed at promoting the safety of Soldiers and Army civilians off-installation as well as the safety of the local civilian population from accidental negative impacts of Army programs. Local civilians will be kept informed of activities that may affect them, such as—

- (1) Training exercises that may produce a high volume of noise.
- (2) Over flights of military aircraft, movement of Soldiers, and materials that may impact traffic (the safety office/public affairs/military police will coordinate with civilian authorities on movement plans and requirements).
- (3) Involve the local population in safety programs that cross installation boundaries (such as safe driving programs).
- (4) Establish procedures to inform the visiting public of the current safety policies and procedures that apply to them and the areas they are visiting.
- (5) The safety office must also work with civilian authorities when accidents occur off the installation to ensure that all critical information is obtained to ascertain the cause of the accident and all contributing factors.

## Chapter 4

### Contracting Safety

#### 4-1. Introduction

The Army has an overall goal of ensuring that contracted work is performed using procedures and risk controls that ensure workers, the public and the environment are not endangered. This chapter provides guidance for implementing AR 385-10, chapter 4.

#### 4-2. Safety and Occupational Health Program

*a.* Army contractors will be required to have a Safety and Occupational Health Program implemented that is tailored to meet the safety requirements of each contract and the associated tasks and products of that contract. This program

will be documented in the contractor's safety plan. Army contracts normally are used to fulfill three types of requirements—

- (1) Provide products and services.
- (2) Provide systems.
- (3) Construct buildings, roads, and other structures in support of the Army mission.

*b.* Contracts that provide products, services, and systems/supplies have requirements that are similar in scope as far as safety is concerned and will be discussed in paragraph 4–3, below. Construction is somewhat unique when it comes to safety and merits its own section, which is located in paragraph 4–4 of this pamphlet.

### **4–3. Contractual requirements for products, services, and system development and fielding**

*a.* Army systems must be safe for the Soldier to use, as well as being reliable and effective. Producing effective systems that operate as designed without placing at risk the safety and health of operators, maintenance personnel and others is a challenge to the acquisition community. System safety is one of the tools available to the developer to reduce risk. System safety procedures and processes should be used to prevent—

- (1) Illness or loss of life.
- (2) Costly setbacks caused by a system that places personnel at risk of injury.

*b.* While it is recognized that there is always an element of danger when using systems that are designed to perform military functions, it is inherent on the developer of the system(s) to reduce risks to Soldiers, civilians, and the environment as much as possible.

*c.* System safety techniques are used by the Army to—

- (1) Identify potential hazards during the design and development process.
- (2) Prevent those hazards from maturing through corrective action taken early in the design and development of the system.

*d.* The system safety engineer must be proactive, using tools both analytical and contractual to ensure that system safety is at the forefront of the development process. A successful and efficient safety program is most effective early in the life cycle, before safety problems become locked into the design and the cost to mitigate safety problems is greatly increased.

*e.* While safety must continue throughout the design, development, production, fielding and deployment of a system, the later stages of the safety program (for example, during production, fielding and deployment) focuses on identifying safety issues that were not identified and corrected earlier or that may have been improperly waived.

*f.* The combat developer, as the Soldier's representative in the development process, defines the requirement for a system. This statement of requirements defines the system's mission, the reliability, and supportability that must be provided by the system, as well as the safety goals and design required. The combat developer needs to analyze historical accident experiences to provide a basis for developing safety requirements for new systems.

*g.* The process of defining the need for a new system will include the application of CRM in the analysis process to—

- (1) Aid in defining areas of risk in the safe operation of the system.
- (2) Determine how the system will work within the Army tactical and strategic operational plans.

*h.* The materiel developer will—

- (1) Design, develop, produce, and field a system that is safe to operate and maintain.
- (2) Integrate system safety into the design and development process to include disposal.

(3) Evaluate the safety aspects of the system under development, identifying risk, and describing how the risk will be eliminated or managed as part of the development process.

*i.* The plan to comply with regulatory requirements for SOH throughout the life cycle of the system will be included in the evaluation. As with a command or installation operation, a system development office also needs professional safety engineer(s) dedicated to the program to ensure that safety is truly an integral part of the design process.

*j.* The system safety process consists of six major steps. These are—

(1) Plan the safety program, describing the system and identifying the people, safety processes, equipment and other factors that are required for a successful safety program.

(2) Identify the hazards associated with the planned system. Using the most current information, identify all safety hazards and their potential effects. This step must be updated regularly as the system design becomes more defined. Implement various safety processes to determine the root causes of the hazards, apply risk management techniques to put the information into a form that is suitable for review by management, and develop safety input for various system documents, such as the Test and Evaluation Master Plan (TEMP).

(3) Develop a methodology for tracking each hazard and progress towards developing a corrective action. Significant elements of the safety program should also be included in the tracking system to ensure that important milestones are met.

(4) Evaluate the potential impact of hazards identified for the system. Perform a risk assessment to assess the probability of the hazard occurring and severity of the hazard. Determine the benefits of eliminating the hazard; include

an assessment of the cost to eliminate as well as the cost associated with the hazard itself. Develop test plans, obtain data from testing, and review test data to identify any new hazards. New hazards should be subject to the same analysis procedures as those identified during the design analysis process.

(5) Hazards should be prioritized for mitigation efforts. The most critical and most likely to occur should be given a higher priority for application of resources; however, minor problems that can be easily corrected should not be neglected. Most importantly, use a tracking system to make sure that no hazard is inadvertently lost from sight. Each hazard should be entered into the hazard tracking system even if the plan is to request a waiver for that hazard.

(6) Finally, control the decision process on hazard mitigation. Control involves not only managing the safety and risk management process, but also ensuring that the safety status of the system is regularly briefed/reported to management, technical and other members of the acquisition team. The status of corrective actions as well as the overall safety program must be reported.

*k.* System safety requires the use of analytical tools to properly evaluate and control hazards (see DA Pam 385–30). These tools may include—

- (1) Failure mode and effects criticality analysis.
- (2) Hazard analysis.
- (3) Hazard and operability study.
- (4) Software hazard analysis.
- (5) Event tree analysis.
- (6) Fault tree analysis.
- (7) Cause-consequence analysis.
- (8) Sneak circuit analysis.
- (9) CRM.

*l.* Each technique listed has pros and cons regarding their use. Some do not consider hazard effects, some are resource intensive and others rely on qualitative analysis versus quantitative approaches. In addition, other techniques that are used in a system safety program are not included in this list. It is usually not necessary to apply each technique to a system. The safety engineer in concert with the design team, reliability engineers, and program management has to tailor the safety program to obtain the greatest possible benefit using the resources available for the program. If one technique can be defined to as always essential to the process, it is CRM. This technique provides a structured approach to assessing risk, and in fact may require elements of other techniques to be successfully implemented.

*m.* In the development of the system safety program the ultimate goal must be kept in sight—producing a system that is safe and without known (or at least uncontrollable) hazards.

#### **4–4. Contractual requirements for construction**

*a.* Army construction contracts fall within the purview of the U.S. Army Corps of Engineers Safety and Health Requirements Manual, EM 385–1–1, and Part 1910, Title 29, Code of Federal Regulations (29 CFR 1910) and Part 1926, Title 29, Code of Federal Regulations (29 CFR 1926) that establish legal requirements. The version in effect at time of contract award will be used to ensure that adequate safety requirements are included in all Army construction contracts. Construction contracts include, but are not limited to new construction, remodeling, repair, landscaping, assembly of pre-fab structures, and so on.

*b.* Construction and architect-engineer contracts will include the Federal Acquisition Regulations (FAR) clause 52.236–13 and will include the Unified Facilities Guide Specifications (UFGS) 013529 (formerly 01525) as appropriate.

*c.* Construction contracts will include the requirement for the contractor to have a site specific safety plan. The plan will be tailored to the project, based on the size and complexity of the construction to be accomplished. A typical safety plan will address such issues as, but will not be limited to—

- (1) The company's safety and health policy.
- (2) Company safety inspections of the job site.
- (3) Use of personnel protective equipment (PPE).
- (4) Safety rules and penalties associated with not following the rules.
- (5) Safety training and frequency (identifying hazards, explaining precautions and proper use of equipment/machinery, and the PPE required for the job (including how to use and maintain PPE)).
- (6) The steps to be followed to report unsafe working conditions and practices.
- (7) Special hazards.
- (8) Hazardous materials (chemical, gases, asbestos, and so on).
- (9) Confined spaces.
- (10) Lockout tag procedures and so on.
- (11) Instruction concerning safe operations and appropriate emergency action in the event of accidental exposure.
- (12) Emergency procedures.
- (13) Identifying personnel on site who have had first aid training.

- (14) Post where communication devices (that is, phones) are located with appropriate phone numbers posted.
- (15) Post how to exit the work area in an expeditious and safe manner.
- (16) The plan will identify the person with lead responsibility for safety, where protective equipment may be obtained (for example, furnished by the company or required to be provided by the employee, or combination thereof), and the procedures for reporting a safety hazard.
- (17) Frequent and regular contractor internal job site inspections should focus on identifying and removing hazards. Whenever possible the inspection will serve as the basis for identifying where hazards have developed or are likely to develop. Based on these inspections the first objective will be to—
- (a) Eliminate the hazard or if that is not possible to determine the best means of mitigating the hazard through work procedures, PPE, or other safety equipment.
- (b) Observe workers to determine if they are using required safety equipment and that the safety equipment meets OSHA standards. Additional training should be provided to the workers as required to eliminate deficiencies found during the site inspections.
- (c) These reports should be required to be retained by the contractor and available for review by the Government as required.
- d. The Contractor's Safety Plan will explain the disciplinary process that will be followed when the contractor job inspections find violations to the safety rules. The disciplinary process should be included in the employee's training and reviewed during regular safety briefings.
- (1) The Government will review the Contractor's Safety Plan for adequacy, completeness and compliance with OSHA and EM 385-1-1 requirements.
- (2) During site visits and inspections, the contractor's compliance with the safety plan, regulatory safety requirements, and accepted practices will be observed.
- (3) Safety violations will be documented and provided to the contracting officer for transmittal to the contractor who will be required to take corrective action.
- (4) Depending upon the severity of the findings, follow-up inspections to determine that specific deficiencies have been corrected may be required.
- e. Regular quality assurance inspections by the contracting officer's representative will include review of the findings to verify that they have been corrected, or are progressing on schedule. If it is determined that the contractor is not delivering the level of safety that is required by the contract, the contracting officer will take necessary actions to attain improve contractor performance. All disincentives normally used for nonperformance in other contract areas should be considered for unresolved safety program deficiencies.
- f. A hazard analysis will be performed by the contractor for all major definable phases of work. This analysis will identify all hazards associated with the work progress through the phase and describe how those hazards will be controlled. Normally the analysis is performed by someone knowledgeable of the phase of the work such as the foreman or seasoned journeyman skilled labor. The analysis will be reviewed and signed off by a competent person (when required by OSHA) or a safety and occupational health professional.
- g. The hazard analysis will be the basis for preoperational briefings by supervision to the construction force so that everyone understands the hazards involved and the controls put into place. The hazard analysis will also drive the content of regular safety tool box meetings as the work progresses.

## **Chapter 5**

### **Public, Volunteer, Family, and Recreational Safety**

#### **5-1. Introduction**

- a. The Army is committed to the safety of Soldiers, their Families, volunteers supporting installation activities, and the public in all aspects of recreational safety. The loss of a Soldier to an accident during recreational activities impacts unit readiness as much as the loss during military operations. Public, Family, and recreational safety contribute to unit readiness. AR 385-10, chapter 7 provides the requirement to establish and maintain a safety program for the public, Family, volunteers, and Soldiers during recreational time.
- b. The U.S. Consumer Product Safety Commission (CPSC). CPSC should be consulted for product alerts and voluntary standards for a wide range of consumer products. See <http://www.cpsc.gov/> for current consumer safety information.
- c. Accidents to the public on military facilities may place facilities out of operation during causality recovery, accident investigation and corrective action time.
- d. The SOH directors will establish a safety program integrating CRM in all non-duty community operations and activities to reduce risk of accidental losses. An integral part of this is for regular training and inspections of public recreation areas and facilities to ensure that safety procedures and equipment are being used.



- e. Safety messages will include appropriate topics for the season and upcoming holidays.

## **5-2. Family safety plans**

a. The SOH program will consist of policy and procedures for developing Family safety plans and promote community safety awareness. All Families should be encouraged in developing safety plans intended to keep the Family safe during normal activities, as well as during unplanned events. The safety plan should address such critical safety areas as—

(1) How to exit from the home during fire or other emergencies, how to establish rendezvous points to verify that all members have exited the home. It is recommended that practice drills on how to exit the home and emergency exit procedures be conducted at least twice a year. When children are younger the plan should include who is responsible for assisting the younger children in evacuation.

(2) The placement and proper use of safety monitors (smoke detectors, carbon monoxide detectors, and similar devices) and regular maintenance (for example, battery replacement) of these devices.

(3) Procedures for ensuring firearms, sports, hunting or kitchen knives are secured and not accessible by children or other unauthorized persons.

(4) Proper use and storage of household products (cleaning material, automotive products - gas, oil, antifreeze and medicines, vitamins, lotions, and other beauty products) so that they are not accessible by young children.

(5) Backup plans for those instances when adults are not able to immediately contact children (procedures may be to contact a trustworthy neighbor or police officer, to remain at school, or other appropriate safe action).

(6) How to use emergency 911 or other specific emergency numbers to summon help.

(7) The advent of bad weather, such as tornadoes, requiring that Family members are taught how to seek shelter. Location of emergency supplies, such as flashlights, tools, and so on; and when and how they should be used. Emergency supplies are properly monitored to ensure that they are current and in useable status.

(8) The correct way to use safety equipment (for example, seat belts, helmets pads, and so on).

(9) The use of lights and reflective clothing in low visibility conditions.

(10) Hearing should not be obstructed by radio or other devices that may mask sounds of traffic or safety signals.

(11) All off road driving training and PPE requirements.

(12) All activities involving travel and vehicular safety have to be performed without alcohol.

(13) Street safety which includes the correct way to walk on a road without sidewalks, observing crosswalks, and signs for safe travel.

b. Recreational safety planning for the Family should address such areas as—

(1) Taking time to explain the rules of each game or activity.

(2) Protective equipment required and how to use it.

(3) How to travel safely to and from play sites.

(4) Actions to take in case of an accident.

## **5-3. Volunteer safety**

Volunteers provide needed support to many Army activities both recreationally and work related. The safety of all volunteers should be assured in activities conducted on base, either directly for Government-sponsored activities, or through appropriate agreements for private organizations. Existing Army safety rules and procedures will be applied to volunteer positions that are utilized in lieu of an equivalent paid Government position.

## **5-4. Public safety**

a. When the public has access to facilities under the control of the Army, precautions must be in place to assure a reasonable level of safety. Precautions that must be in place include—

(1) Signs guiding to and from public areas (including procedures for parking, paths to be used to access open areas, and so on).

(2) Enforcement of protective equipment use (both personal and general).

(3) Proper maintenance of area (that is, parade ground, commissary) into which the public is allowed.

(4) Notices posted on how to seek emergency assistance.

b. The Army goal is show the public that a professional, well-organized organization is in place. Ensuring public safety is a critical step in achieving this goal.

## **5-5. Recreational safety**

a. Sports and recreation play a key role in maintaining the Army as a premier fighting force. Physical exertion, discipline, teamwork, and mental processes necessary to excel exercises and displays leadership. The competitiveness that is a natural part of sports contributes the physical and mental growth of Soldiers. Improvements in morale result from well-designed and executed sports and recreational programs.

b. Recreational safety programs focus attention on the risk associated with many recreational and sport activities,

both on and off duty, that are significant contributors to injury and sometimes to death. These risks encompass the gauntlet of possible accidents, from falls to being struck by various objects, to accidents involving various means of transportation. Most injuries from sports and recreational activities are relatively minor: bruises, cuts and strains. However, even these minor injuries may contribute to the temporary loss of manpower and less effective on-job performance. Note: Throughout this pamphlet the term "sports and recreation" will include sports, physical training and recreational activities. Recreational activities include nonphysical related activities as well as physical (that is, recreation centers, arts and crafts, library activities, and so on).

c. Many recreational activities involve athletic or sporting events of some kind. Recreational activities frequently involve varying degrees of risk. Activities involving frequent contact with other players or equipment significantly contribute to accidents.

(1) Football (tackle followed by flag football) leads the way with injuries, (followed by baseball/softball and basketball).

(2) When a sport is unsupervised, the number of injuries tends to increase (that is, street basketball, pickup baseball).

(3) Sporting activities involving individual participation (boating, fishing, hunting, and so on) tend to have more fatal injuries than those that are supervised. Examples of single sports include hiking, boating, and hunting, among others.

(4) Most sports injuries can be attributed to five basic causes, or a combination thereof—

(a) Not following the rules.

(b) Lack of skill and ability for the sport being played.

(c) Not using proper personal protective equipment.

(d) Not in condition for the activity being pursued.

(e) Inadequate warm up/cool down.

(5) The most effective means of preventing sports and recreational accidents is through the coordinated, unified effort of all involved, Army agencies, units, and individuals. The commander has to take the lead to meld the separate organizations together in the pursuit of safety.

(6) The "weekend player" syndrome is typical of the person who is not in condition for the activity at hand. By not participating in physical activity that prepares the body for sport/play activities the person risks over-stressing muscles, heart and other body parts to the point that injury may occur.

(7) Commanders, directors, supervisors should encourage personnel (through advertising, chain of command, and other appropriate means) of the importance to precondition for sports and recreational activities.

(8) Prior to participating in physically demanding sports or physical training, a physical examination should be performed by medical personnel (preferably a medical officer) to ensure there are no unknown factors that might place the participant at higher risk of injury.

(9) For some activities, such as football, the installation commander may require a medical examination each year to ensure that each participant is physically able to take part.

(10) Physical conditioning should be built into the recreational program to bring all participants to a similar level of physical readiness.

(11) Commander, directors and supervisor of sports and recreational activities and operations are responsible for ensuring that recreational areas are safe and are maintained to the extent required for safe use. The facility manager will ensure that recreational areas are safe and are maintained to the extent required for safe use.

(12) Planning for sports activities should include deciding what equipment and facilities are required. Equipment available for use by Soldiers and dependents, and perhaps the public needs to meet applicable OSHA, DOD, and Army safety standards. This applies to swimming equipment, equipment used for activities (baseball, volleyball, softball, football, and so on). Safety equipment at recreational locations must meet these standards and be present when the facility is being used. Examples of this are—

(a) Rescue equipment (rings and poles) at swimming pools and areas.

(b) Proper bats for baseball/softball (that is, bats not made of titanium, approved head gear for batters).

(c) Rental equipment that is well maintained and conforms to safety standards.

(d) Inspections should be conducted of recreational equipment (for example, equipment - bats, pads, helmets; boats; bikes; off-road vehicles and similar devices) used on the installation.

(13) The commander will establish and encourage a practice rule against alcohol being used by participants of motor sports (including boating, off road racing, and so on). Alcohol use by participants in any recreational activity should be monitored.

(14) SOH staff will assist leaders supervising sports and recreational activities integrate CRM in—

(a) Identifying hazards.

(b) Assessing the hazard.

(c) Determining the risk associated with each hazard.

(d) Implementing controls.

- (e) Supervising implementation of the controls.
  - (f) Verifying that the rules for each recreational activity have been established and that all participants (players and coaches) will be trained on the rules. Rules will be enforced to promote safety during each event.
- (15) The commander should ensure that the schedules for sporting activities are reasonable in that teams and players are evenly matched. This reduces the chances for one primary source of injury, the scheduling of two teams with wide variation in athletic ability. When one team overpowers another, the opportunity for injury increases dramatically. Scheduling should also allow for sufficient practice and conditioning time to get the players in good physical shape for playing and to ensure that they know how to play the game, including the rules and proper use of safety equipment.
- (16) Component officials who enforce the rules are vital to safety. The proper application of rules serves to reduce hazards and injuries. After the coaches and supervisors have set the precedent for following the rules and playing accordingly it is the officials who have the responsibility for making sure that this occurs on the playing field.
- (17) Should an accident occur—
- (a) The first priority is to render the appropriate first aid to the injured person. Coaches and supervisors should be trained in first aid and appropriate procedures to be followed should an accident occurs.
  - (b) Accidents will be reported through formal channels.
  - (c) At the local level, accident information will be used to determine if there are ways to prevent the situation in the future. Accident records should be used in the analysis of sports activity to identify trends and determine where action is required to correct a problematic situation. Accident history should be used when stressing the importance of safety to participants.

## **5–6. Other activity recreational safety**

a. Activities in this category fall into indoor and outdoor categories. Outdoor activities are exemplified by horse-shoes, volleyball, badminton, tennis, and shuffleboard. Indoor activities cover such areas as table tennis, darts, billiards, and air hockey. Other recreational activities also include shops where Soldiers can work on their motor vehicles, wood working shops, and ceramic kilns. Examples of hazards are—

- (1) Lifting of heavy material.
  - (2) Respiratory hazards (air contaminants (dust, mists from paints)).
  - (3) Objects dropped on the hands or feet or other part of the body.
  - (4) Noise.
  - (5) Flying objects.
  - (6) Hazardous materials (that is, chemical, acids, and so on).
  - (7) Sharp tools.
  - (8) Weather conditions.
- b. Staff personnel will develop risk assessments for each activity and participants will be trained in applicable safety measures. Staff personnel monitoring and/or supervising the area has to take responsibility for ensuring the safe operation of equipment and conduct of the activity. To counter the hazards that are present during recreational activities it is necessary to—
- (1) Establish understandable rules that are posted and available for review by all participants.
  - (2) Post operational instructions for machinery and games, ensuring safety warnings, and cautions are prominently posted.
  - (3) Train staff personnel on all equipment and tools in their area.
  - (4) Do not allow use of power machinery and tools until the operator has been instructed on proper operation and use of appropriate safety equipment (such as goggles for sanders).
  - (5) Enforce the use of PPE.
  - (6) Inspect all machinery, tools, and recreational items prior to use and required daily maintenance will be performed prior to use.
  - (7) Remove all defective equipment from service until repairs have been accomplished.
  - (8) Require personnel use the appropriate PPE to use equipment, tools and game items. This equipment has to be suitable for the activity and the environment in which it is being used. For example, hearing protection may not be required to operate a particular piece of machinery, but if that item is to be used in an area where noise from other sources is in the range that requires protection then the person operating the item that is within safe hearing limits must also wear hearing protection.
  - (9) Inspect, regularly, the activity area to provide guidance on—
    - (a) The safe operation of equipment and tools.
    - (b) The proper use of PPE.
    - (c) The removal of personnel using equipment in an unsafe manner.
    - (d) The personnel following and adhering to facility standing operating procedures (SOPs).
  - (10) Upon cessation of activities, tools, machinery, and game equipment will be cleaned if necessary and returned to

the proper storage area. Any problems or failures encountered will be reported to the staff for corrective action and maintenance as required.

## **Chapter 6**

### **Army Accident Prevention Awards Program**

#### **6-1. Introduction**

This chapter provides guidance for the recognition of organizations and individuals for contributions and enhancements to the Army Safety Awards Program. This pamphlet prescribes policies, procedures and qualifications standards to implement the Army Safety Awards Program. The Army Safety Awards Program is structured to recognize outstanding work in the field of safety by individuals and by units. This chapter provides implementing guidance in support of AR 385-10, chapter 8.

#### **6-2. Procedures**

Awards will be made to individuals and units based on their overall safety achievements. The standard policy staff functions in AR 385-10 and DA Pam 385-10 may be used to evaluate safety programs.

*a.* Army Headquarters award programs will be an item of special interest during safety assessments conducted by Director of Army Safety (DASAF).

*b.* Army safety awards will be approved and presented in accordance with the criteria established in this pamphlet. Augmentation of Army Headquarters Safety Award Programs with local safety awards is encouraged.

*c.* Receipt of a safety award does not preclude an individual from receiving a military award as described in AR 600-8-22 or an incentive award as described in AR 385-30.

*d.* A nomination for an award should be submitted to the appropriate approval authority within two years of the action or period under consideration. Nominations may be made for actions prior to the two-year limit, but more current nominations may preclude full consideration. Nominations should be prepared in accordance with procedures set-forth in AR 25-50. Pre-formatted nomination sheets are available on-line at <https://crc.army.mil> (see DA Form 1119-1 (Certificate of Achievement in Safety) for an example).

*e.* Replacement of awards is at the discretion of the award approving authority. Proof of award and justification will accompany requests for award replacement.

*f.* Records of awards will be maintained in accordance with AR 25-400-2. The U.S. Army Combat Readiness Center (USACRC) Awards Manager will maintain records for DA level awards Army DASAF, and Sergeant Major of the Army (SMA) accident prevention awards outlined in this regulation pamphlet.

*g.* Additional information regarding this program is located at <https://crc.army.mil> under the Awards Program. For further information contact—

(1) For Army DASAF, and SMA approved awards, with the exception of U.S. Army Broken Wing nominations, contact the awards administrator at [ASO@hqda.army.mil](mailto:ASO@hqda.army.mil), or DSN 332-3509 or CML (703) 602-3509.

(2) For questions on the U.S. Army Broken Wing award, contact [safetyawards@crc.army.mil](mailto:safetyawards@crc.army.mil) or DSN 558-0252 or CML (334) 255-0252 or USACRC help desk for current number.

#### **6-3. Department of the Army level unit awards**

A hierarchy has been established that recognizes different levels of achievement with awards from lower command levels through the CSA in accordance with AR 385-10, chapter 8. DA level awards—

*a. Army Headquarters Safety Award.*

(1) *Recipient.* Army Headquarters including 's and DRU's.

(2) *Eligibility requirements.* Army Headquarters must demonstrate significant improvements, sustained excellence and/or leadership in accident prevention programs and performance. The time frame for the award is based on a fiscal year. Demonstration of merit may be made using both subjective and objective criteria. Examples of criteria that may be used to substantiate program improvements and support the nomination include, but are not limited to, the following:

(a) Private motor vehicle (PMV) accidents.

(b) Army motor vehicle (AMV) accidents.

(c) Aviation accidents.

(d) On-duty personnel injuries.

(e) Off-duty personnel injuries.

(f) Civilian injury and illness reduction program.

(g) Workers compensation costs.

(h) Percentages of individuals or organizations that have completed training to improve safety awareness.

- (i) Seatbelt usage rates.
  - (j) Strategies, controls, or policies that have contributed to mission and operational success. Include circumstances, hazards, movements, and so on, evidence of success and potential for Army-wide applicability.
  - (k) Proactive measures taken to enhance risk management implementation.
  - (l) Description of safety processes, to include incentive programs, inspection visits, training events, and so on.
  - (m) Description of total command involvement and support of safety programs.
  - (n) Description of initiatives that are not required but will enhance the command safety program such as purchase of ergonomic equipment or work stations, partnering with the community, or other Government activities and organizations.
- (3) *Initiator.* Army Headquarters Commander, Safety Director, or DASAF.
- (4) *Nominations.* Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25-50 through your local chain of command (addressed thru the first O-6 or equivalent) to the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination will include a concise introduction which describes specific achievements that merit consideration and a summary explanation of their accomplishments. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to ASO@hqda.army.mil no later than 15 November each year.
- (5) *Documentation.* The nomination package will have narrative text and may include graphics; (for example, tables, charts, diagrams, and/or photographs to clarify accomplishments). When printed the package will consist of no more than seven standard-size, single-spaced pages.
- (6) *Judging.* The DASAF or a designated representative will convene a panel to make recommendations for recipients of this award. The panel will consist of at least four safety directors or safety managers from different Army Headquarters or installations.
- (7) *Presentation.* The CSA will make presentation at a venue to be determined.
- (8) *Approval authority.* The CSA is the approval authority.
- (9) *Award.* A plaque will be the award.
- b. Army Exceptional Organization Safety Award.*
- (1) *Recipients.* Organizations below Army Headquarters level (to battalion level) will be the recipients of the award.
- (2) *Eligibility requirements.* The organization as selected by its higher levels of command (through Army Headquarters) with the most effective overall safety program. Army Headquarters may select one nominee in each of the following categories-division, brigade, battalion and garrison (or equivalent). Army Headquarters are to develop policies and procedures that foster the competitive and progressive nature of this award which is akin to a "Soldier of the Year" competition. The time frame for the award is one fiscal year. Demonstrations of merit may be made using both subjective and objective criteria. Criteria that may be used to support the nomination are listed below—
- (a) The organization's mission, location, type, and number of assigned personnel.
  - (b) Commander's support of higher Headquarters and DA safety campaigns.
  - (c) Accident statistics and experiences.
  - (d) Methods used to effect or sustain accident reduction (for example, safety training or new initiatives).
  - (e) Major accomplishments.
  - (f) Objectives for the coming year.
  - (g) Civilian injury and illness reduction program.
  - (h) Workers compensation costs.
  - (i) Percentage of commanders who have completed the Commander's Safety Course.
  - (j) Seatbelt usage rates.
  - (k) Strategies, controls, or policies that have contributed to mission and operational success. Include circumstances, hazards, movements, and so on, evidence of success and potential for command wide applicability.
  - (l) Proactive measures taken to enhance CRM implementation.
  - (m) Description of total command involvement and support of safety programs.
  - (n) Description of initiatives that are not required but will enhance the command safety program, such as purchase of ergonomic equipment or work stations, and partnering with the community or other Government activities.
- (3) *Initiator.* Unit or facility commander or manager, or installation/unit safety manager can be the initiators.
- (4) *Nominations.* Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25-50 through your local chain of command (brigade, division, and individual command as applicable). To the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination will have narrative text and may include graphics; that is, tables, charts, diagrams, and/or photographs to clarify accomplishments. When printed the nomination will consist of no more than seven standard-size, single-spaced pages. The nomination will include a concise introduction which describes specific achievements that merit consideration and a summary explanation of what is being done toward continued mishap reduction and details

on unique/specific initiatives. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to ASO@hqda.army.mil no later than 15 November of each year.

(5) *Judging.* The DASAF or a designated representative will convene a panel to make recommendations for recipients of this award. The panel will consist of at least four safety directors or safety managers from different Army Headquarters or installations.

(6) *Presentation.* The CSA will award at a venue to be determined.

(7) *Approval authority.* The CSA will be the approval authority.

(8) *Award.* A plaque will be the award.

*c. Army Individual Award for Excellence in Safety.*

(1) *Recipients.* U.S. Army military personnel, DA civilians and Army contracted employees will be the recipients.

(2) *Eligibility requirements.* An individual selected by levels of command through Army Headquarters as having made the most significant contribution to the unit's or activity's accident prevention effort. One plaque is awarded each fiscal year in each of four categories as follows: U.S. Army military officer, U.S. Army noncommissioned officer (NCO)/enlisted, DA civilian employee, and Army contractor. Army Headquarters will develop policies and procedures that foster the competitive and progressive nature of this award, which is akin to a "Soldier of the Year" competition. The time frame for the award is one fiscal year. Demonstration of merit may be made using both subjective and objective criteria. The following are examples of significant contributions and criteria that may be used:

(a) Through personal emphasis a commander reduces their organization's PMV accident and fatality rate by 25 percent.

(b) A DA civilian supervisor of a Government-owned, contractor-operated ammunition plant reduces on-the-job accident rate by 25 percent one year through personal involvement in the plant's accident prevention program.

(c) Discussions on the organization's mission, location, and number and type of assigned personnel as it relates to the overall safety program.

(d) An enlisted Soldier implements a command level motor pool safety program that results in sustain accident reduction, increased safety awareness, improved Soldier morale, which results in overall equipment readiness.

(e) An individual's achievements relating to safety and methods used to effect or sustain accident reduction.

(3) *Initiator.* Organizational manager/unit commander will be the initiator.

(4) *Nominations.* Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25-50 through your local chain of command (addressed thru the first O-6 or equivalent) to the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination will have the individual's name, military or civilian grade, military occupational specialty (MOS) or civilian job series and duty position or job title, along with the individual's job/duty description. When printed the nomination will consist of no more than seven standard-size, single-spaced pages. The nomination will include a concise introduction which describes specific achievements that merit consideration and a summary explanation of their safety and CRM accomplishments. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to ASO@hqda.army.mil no later than 15 November of each year.

(5) *Judging.* The DASAF or a designated representative will convene a panel to make recommendations for recipients of this award. The panel will consist of at least four safety directors or safety managers from different Army Headquarters or installations.

(6) *Presentation.* The CSA will present this award.

(7) *Approval authority.* The CSA will be the approval authority.

(8) *Award.* A plaque is the award.

*d. DA Form 5777 (United States Army Safety Guardian Award).*

(1) *Recipients.* U.S. Army military personnel, DA civilians, and Army contracted employees.

(2) *Eligibility requirements.* An individual must, through extraordinary actions or skills, react to an emergency event or an imminently dangerous situation, thereby eliminating or minimizing loss, such as damage to Army property or injury to Army personnel. Emergencies or dangerous situation resulting from enemy action are not excluded from consideration. Individuals will not be considered for the award if they had a casual role in the emergency event or dangerous situation.

(3) *Initiator.* The DASAF may initiate or the unit commander/activity director may send a request for consideration through the first O-6 (or equivalent civilian grade) in the individual's or unit's chain of command.

(4) *Nominations.* Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25-50 through your local chain of command (addressed thru the first O-6 or equivalent) to the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination will include a concise introduction which describes specific achievements that merit consideration and a summary explanation of their accomplishments. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to ASO@hqda.army.mil.

(5) *Documentation.* Nominations will include the following:

(a) Full name, grade, and duty being performed at the time of the act.

- (b) Date, time, and location of act.
  - (c) Personnel and equipment involved, including dollar value, if applicable.
  - (d) Concise description of situation necessitating the act.
  - (e) Specific action taken by the nominee.
  - (f) Lapsed time from the onset of the situation to termination.
  - (g) Drawings, other supporting documentation, and photographs, if available.
  - (h) A copy of the Accident Investigation Report, if applicable.
  - (i) Initiator contact information to include e-mail address and telephone.
- (6) *Judging.* The DASAF or a designated representative will convene a panel as needed to screen nominations and make recommendations for the award. The panel will be composed of at least four Army Headquarters or installation safety personnel and the Deputy Director of Army Safety or their designated representative. If the nomination is based on the operation of special military equipment, one member of the board must be qualified on that piece of equipment.
- (7) *Approval authority.* The DASAF will be the approval authority.
- (8) *Award.* A guardian plaque and certificate will be the awards.
- e. Sergeant Major of the Army (SMA) Superior Soldier Safety Award.*
- (1) *Recipients.* Individual Soldiers will be the recipients.
  - (2) *Eligibility requirement.* To be eligible, a Soldier demonstrates “Pockets of Excellence” or “Best Practices” in safeguarding Army operations or personnel.
  - (3) *Initiator.* SMA may initiate or an Army Headquarters CSM may submit a request for consideration to the SMA.
  - (4) *Nominations.* Nominations will be sent to the SMA (SMA Awards Manager), Office of the Sergeant Major of the Army, 203 Army Pentagon (3E541), Washington, DC 20310–0203.
  - (5) *Documentation:* Documentation is required is as follows:
    - (a) Name of individual or organization.
    - (b) Date award given and time period of achievement.
    - (c) Achievement relating to safety.
    - (d) Any other pertinent data that justifies the SMA presenting the award.
    - (e) A record of approved awards will be sent to the USACRC awards manager.
  - (6) *Judging.* The SMA will do the judging.
  - (7) *Award.* A plaque will be the award.
  - (8) *Presentation.* SMA will present the award. An Army Headquarters CSM may use a scheduled SMA visit as an opportunity for presentation. Under certain circumstances the SMA may authorize the Army Headquarters CSM to present the award.
- f. DA Form 5778 (Army Aviation Broken Wing Award).*
- (1) *Recipients.* Individuals performing authorized aircrewmember flight duties on behalf of the Army while on a DOD mission are eligible to receive this award.
  - (2) *Eligibility requirements.* An aircrewmember must, through outstanding airmanship, minimize or prevent aircraft damage or injury to personnel during an emergency situation. The aircrewmember must have shown extraordinary skill while recovering an aircraft from an in-flight emergency situation. If more than one crewmember materially contributed to successful recovery from the emergency, each of those involved should be considered for nomination. Emergencies resulting from enemy action are not excluded from consideration. An emergency will not be considered for award if—
    - (a) It is self-induced.
    - (b) It actually occurs during a simulated emergency requiring no added skill to land the aircraft successfully.
    - (c) It occurs because of noncompliance with published regulations or procedures.
    - (d) It is determined that no emergency actually existed.
    - (e) In the panel’s opinion, a lack of discipline or aviator judgment may have induced the emergency.
    - (f) The aircraft was in a phase of flight with no unfavorable circumstances to prevent a safe landing.
  - (3) *Initiator.* The DASAF may initiate or the unit commander/activity director may send a request for consideration through the first O–6 (or equivalent civilian grade) in the individual’s or unit’s chain of command.
  - (4) *Nominations.* Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25–50 through your local chain of command (addressed thru the first O–6 or equivalent) to the attention of the Commander, U.S. Army Combat Readiness Center, (USACRC), (CSSC–PT) (Broken Wing Award), Fort Rucker, AL, 36362. The nomination will include a concise introduction which describes specific achievements that merit consideration and a summary explanation of their accomplishments. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to [safetyawards@crc.army.mil](mailto:safetyawards@crc.army.mil).
  - (5) *Documentation.* Nominations will contain the following information:
    - (a) Full name, rank, and crew duty position (for example, instructor pilot, pilot, copilot, student pilot, or rated student pilot) of the person actually on the controls during the emergency.

- (b) Date, time, location, above ground level altitude, density altitude, wind conditions (direction and velocity), visibility, illumination, and gross weight at onset and termination of the emergency.
  - (c) Mission type, design, and series of the aircraft involved.
  - (d) Type of mission.
  - (e) Phase of flight when the emergency occurred (for example, hover, takeoff climb, cruise, descent, approach to landing, autorotation).
  - (f) Terrain and obstructions over which the emergency occurred.
  - (g) Concise description of the emergency from onset to termination to include action taken by the nominee to cope with the emergency or minimize damage or injury. The circumstance surrounding the occurrence must be documented to show the skill, knowledge, judgment, and technique required and used in recovering from the emergency.
  - (h) Drawings, other supporting documentation, and photographs, if available.
  - (i) Copy of applicable accident report.
  - (j) Initiator contact information to include e-mail address and telephone number.
- (6) *Judging.* The DASAF will convene a panel when nominations are received. The panel will consist of the DASAF or a designated representative and at least five aviators; it may include senior enlisted crewmembers when appropriate. At least one panel member will be qualified in the mission type and design of the aircraft involved in the emergency.
- (7) *Approval authority.* The DASAF will be the approval authority.
- (8) *Award.* A Broken Wing Award Plaque, certificate, and lapel pin will be the awards.
- g. *Director of Army Safety Composite Risk Management Award.*
- (1) *Recipients.* Individuals or organizations.
- (2) *Eligibility requirements.* An individual or organization must have demonstrated exemplary leadership or made a significant contribution to Army readiness through CRM.
- (3) *Initiator.* The DASAF may initiate or the unit commander/activity director may send a request for consideration through the first O-6 (or equivalent civilian grade) in the individual's or unit's chain of command.
- (4) *Nominations.* Prepare a thru memorandum with supporting documentation as needed in accordance with AR 25-50 through your local chain of command (addressed thru the first O-6 or equivalent) to the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. When printed the nomination will consist of no more than seven standard-size, single-spaced pages. The nomination will include a concise introduction, which describes specific achievements that merit consideration and a summary explanation of their CRM accomplishments. Initiator point of contact information will include e-mail address and telephone number. Approved nominations may be electronically sent to ASO@hqda.army.mil.
- (5) *Documentation.* Documentation required is as follows:
- (a) Name of individual or organization.
  - (b) Date or time period of achievement.
  - (c) Achievement relating to safety.
  - (d) Any other pertinent data.
- (6) *Judging.* The award decision is made by DASAF.
- (7) *Approval authority.* The DASAF will be the approval authority.
- (8) *Award.* A plaque is the award.
- h. *Army Industrial Operations Safety Award.*
- (1) *Recipients.* Organizations below Army Headquarters level.
- (2) *Eligibility requirements.* The organization as selected by its higher levels of command with the most effective overall industrial safety program. Army Headquarters may select one nominee from Division, Depot, Garrison, down to company, shop and/or section level. Army Headquarters are to develop policies and procedures that foster the competitive and progressive nature of this award, which is akin to an "Army Exceptional Organization Award" or "Army Headquarters Safety Award" competition. The timeframe for the award is based on a fiscal year. Demonstrations of merit may be made using both subjective and objective criteria. Criteria that may be used to support the nomination include, but are not limited to—
- (a) Safety Policy.
  - (b) Preoperational planning.
  - (c) Standing Operating Procedures/Job Hazard Analyses.
  - (d) Accident prevention plan.
  - (e) Emergency response plan.
  - (f) Training, licensing, qualifications.
  - (g) Personal protective equipment.
  - (h) Ergonomics.
  - (i) Machine safeguarding.



- (j) Confined Space.
  - (k) Lockout/tagout.
  - (l) Worker compensation costs.
  - (m) Injury/Accident Frequency Rates (exhibit time frame).
  - (n) Strategies, controls, or policies that have contributed to mission and operational success, such as Lean Six Sigma and the Voluntary Protection Program. Include circumstances, hazards, movements, and so forth, evidence and potential for Army-wide applicability.
  - (o) Proactive measures taken to enhance risk management implementation, such as evidence of a close working relationship among the Safety, Occupational Health and Environmental Offices.
  - (p) Description of safety processes, to include incentive programs, inspection visits, training events, and so forth.
  - (q) Description of total command involvement and support of safety program.
  - (r) Description of initiatives that are not required but will enhance the command safety program such as partnering with the local community or other activities and organizations.
  - (s) Occupational Health/Industrial Hygiene Initiatives.
  - (t) Environmental Program Initiatives.
  - (u) Wellness Initiatives (for example, integration of Safety and Health Programs (on and off duty)).
- (3) *Initiator*. Army Commands, ASCCs, or DRUs.
  - (4) *Nominations*. Prepare a THRU memorandum with supporting documentation as needed in accordance with AR 25-50 through command headquarters (address through the first O-6 or equivalent) and through the Army Headquarters; TO the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination shall include a concise introduction, which describes specific achievements that merit consideration and summary explanation of their accomplishments. Initiator point of contact information will include e-mail address and telephone number. Army Headquarters approved nominations may be electronically sent to ASO@hqda.army.mil no later than 15 November of each year.
  - (5) *Documentation*. The nomination package shall have narrative text and may include graphics; for example, tables, charts, diagrams, and/or photographs to clarify accomplishments. When printed, the package shall consist of no more than seven standard-size, single spaced pages.
  - (6) *Judging*. The DASAF or a designated representative will convene a panel to make recommendations for recipients of this award. The panel will consist of at least three senior safety professionals.
  - (7) *Presentation*. The SA/CSA will determine the venue for award presentation.
  - (8) *Approval authority*. The SA/CSA will be the approval authority.
  - (9) *Award*. A plaque is the award.
- i. Army Excellence in Explosive Safety Award.
    - (1) *Recipients*. Organizations below Army Headquarters, (division, depot, garrison, down to company, shop and/or section level).
    - (2) *Eligibility requirements*. The organization as selected by its higher levels of command with the most effective overall explosives safety program. Army Headquarters may select one nominee each from division, brigade, battalion, depot/garrison/activity, down to company level. Army Headquarters are to develop policies and procedures that foster the competitive and progressive nature of this award, which is akin to an "Army Exceptional Organization Award" or "Army Headquarters Safety Award" competition. The timeframe for the award is based on fiscal year. Demonstration of merit may be made using both subjective and objective criteria. Criteria that may be used to support the nomination include, but are not limited to:
      - (a) Command emphasis on explosive safety.
      - (b) Risk management/standing operating procedures/job hazard analysis process.
      - (c) Strategies, controls, or policies that have contributed to mission and operational success. Include circumstances, hazards, movements, and so forth, evidence and potential for Army-wide applicability.
      - (d) Accident prevention planning.
      - (e) Emergency response planning.
      - (f) Injury/accident frequency rates (exhibit timeframe).
      - (g) Proactive measures taken to enhance risk management implementation, such as evidence of a close working relationship among the safety, occupational health and environmental offices, continuous improvement initiatives, incentive measures, and establishment of explosives safety committee/councils.
      - (h) Training improvements or enhancements.
      - (i) Ammunition/explosives operational improvements.
      - (j) System safety analyses and design improvements in ammunition items and explosives safety controls.
      - (k) Publication of ammunition/explosives safety articles/communications.
    - (3) *Initiator*. Army Commands, ASCCs, or DRUs.
    - (4) *Nominations*. Prepare a THRU memorandum with supporting documentation as needed in accordance with AR

25–50 through command headquarters (address through the first O–6 or equivalent) and through the Army Headquarters TO the attention of the Director of Army Safety, (DACS-SF) Awards Administrator, 223 23<sup>rd</sup> Street, Room 980, Arlington, VA 22202. The nomination shall include a concise introduction, which describes specific achievements that merit consideration and summary explanation of their accomplishment. Initiator point of contact information will include e-mail address and telephone number. Army Headquarters approved nominations may be electronically sent to ASO@hqda.army.mil no later than 15 December of each year.

(5) *Documentation.* The nomination package shall have narrative text and may include graphics; for example tables, charts, diagrams, and/or photographs to clarify accomplishments. When printed, the packages shall consist of no more than seven standard-sized, single spaced pages.

(6) *Judging.* The DASAF or a designated representative will convene a panel to make recommendations for recipients of this award. The panel will consist of at least three senior safety professionals.

(7) *Presentation.* The SA/CSA will determine the venue for award presentation.

(8) *Approval authority.* The SA/CSA will be the approval authority.

(9) *Award.* A plaque is the award.

#### **6–4. Army headquarters and organization level awards**

*a. DA Form 5775 (Army Accident Prevention Award of Accomplishment).*

(1) *Recipients.* Table of organization and equipment (TOE) or table of distribution and allowance (TDA) detachments; company size units, battalions, or equivalent; brigades or equivalent; and divisions, installations, or activities are the recipients.

(2) *Eligibility requirements.* To be eligible, an organization must complete 12 consecutive months or complete a major training exercise or compete an actual deployment of greater than 120 days without experiencing a class A, B, or C accident (accident classes as defined in DA Pam 385–40) attributable to human error. For the purpose of this award, a major training exercise is considered as an operation conducted at no less than an O–6 level. Only property damage will be considered in determining class C accidents. Class C accidents that do not meet damage costs as defined in DA Pam 385–40 will not be considered as disqualifying. If an organization considers an accident on its record to have been unpreventable it may request an eligibility determination from their Army Headquarters Safety Director or the USACRC. Awards will not be approved for overlapping time frames. Army Headquarters commanders may establish specific criteria for this award. Subsequent years of eligibility may be the basis for a repeat of this award or for an award as developed by the Army Headquarters (2nd year, 3rd year, and so on).

(3) *Initiator.* Organization commander or manager, or organization safety manager.

(4) *Nominations.* Nominations will be submitted through the unit's chain of command to the Army Headquarters commander for screening and verification of the unit's performance.

(5) *Documentation.* Each level of command must endorse the request and verify that the unit is eligible for the award.

(6) *Judging.* The judging is determined by the Army Headquarters commander.

(7) *Approval authority.* Army Headquarters commander will be the approval authority.

(8) *Award.* The Army Accident Prevention Award of Accomplishment certificate will be the award. A template is located at the USACRC Web site, <https://crc.army.mil> under the Awards Program. Army Headquarters are encouraged to modify this template or design a suitable replacement certificate or plaque. Certificates should be framed for presentation.

*b. United States Army Aircrewmember Safety Award.*

(1) *Recipients.* U.S. Army military personnel, DA civilian, and Army contracted employees who perform aerial flights as aircrewmembers will be the recipients.

(2) *Eligibility requirements.* To be eligible, a nominee must complete at least 500 flight hours as an aircrewmember in an U.S. Army aircraft without having a contributing role in a human-factor-related class A, B, or C aviation accident (accident classes defined in DA Pam 385–40). Subsequent awards will be in increments of 500 hours.

(3) *Initiator.* Organization commander or representative will be the initiator.

(4) *Nomination.* Nominations will be made in accordance with organization SOP and will include a statement that the unit Aviation Safety Officer has verified safety records by checking the nominee's DA Form 759 (Individual Flight Record and Certification).

(5) *Judging.* Judging will be done in accordance with unit SOP.

(6) *Approval authority.* The approval authority belongs to the appropriate aviation unit commander.

(7) *Award.* DA Form 1119–1 (Certificate of Achievement in Safety). Commanders are authorized to substitute a unit certificate for the DA Form 1119–1.

*c. Other awards.* Leaders at all levels will recognize safe performance displayed by individuals within their organization. Leaders are encouraged to develop and awards that are tailored to recognize the accident prevention accomplishments within their sphere of activity, interest, or operation. Leaders may use the DA Form 1119–1 or are authorized to design and use locally produced certificates or trophies in place of the DA Form 1119–1. Awards will be

signed by the organization's leader and will include, at a minimum, the awardees' name and the contribution for which the award is given.

*d. Unit Impact Award.*

(1) *Purpose.* Impact awards support the safety strategy of the Army to further mission readiness through risk reduction and management.

(2) *Policy.* Commanders are encouraged to develop and issue policies for Safety Impact Awards to promote safety awareness through on the spot recognition of safety related actions which are above and beyond what is required of an individual or organization, and which would normally go unnoticed.

(3) *Awards.* Impact award items should convey safety information that supports the organization's safety mission, rather than agency logos or general agency slogans.

## **Chapter 7 Safety Training Requirements**

### **7-1. General**

The Army goal is to have a well-trained cadre of safety professionals providing leadership in safety and to have Soldiers and civilian employees knowledgeable in the practical application of safety to their job, as required in AR 385-10, chapter 10. The is the proponent for specialized safety training in accordance with AR 600-3. This requirement is based on the requirement that various functions with the Army require specialized training.

*a.* Safety professionals will be trained in the basics of safety. Supplemental safety training is required throughout their careers. Each safety manager will identify training required by personnel under their supervision, and themselves, to develop a schedule and budget to achieve the required training. Using the current Army Career, Training, Education, and Development System (ACTEDS) as guidance, each safety manager will identify training required by personnel under their supervision, and develop an Individual Development Plan (IDP) to document short-term and long-term professional development goals. Training should be selected that would enhance each employee's knowledge and understanding of safety, with emphasis in specialty areas (that is, radiological safety, industrial hygiene).

*b.* Safety managers also have the function of identifying safety training required for job performance for personnel within their area of responsibility. Safety training may be incorporated into operational instruction on systems and task performance, or be a stand alone course addressing a specific area, such as that provided for personnel operating an ammunition supply point.

### **7-2. Safety professional training**

Army safety professionals provide safety guidance and oversight of safety within their area(s) of responsibility. They advise their commander on safety issues and policy and have the staff function of ensuring that policy is implemented within the command. Due to the variety of functions that each safety professional may be required to perform, it is essential that they be knowledgeable in all aspects of safety, including changes in public law, DOD or Army regulation, and scientific findings in hazards and safe operations. Safety professionals that specialize in specific areas, such as radiation must be the expert in their area. The current ACTEDS lists the competencies required at each GS-grade level for specific safety disciplines.

*a.* USACRC offers several professional development courses on the Combat Readiness University (CRU) at <https://crc.army.mil>. Among these are—

- (1) Commanders Safety Course.
- (2) Additional Duty Safety Course.
- (3) Army Accident Avoidance Course.
- (4) Army Safety Program Management.
- (5) Theory and Application of Accident Prevention.
- (6) Accident Investigation Board President Course (AIBPC).
- (7) Radiation Safety.
- (8) Explosives Safety.
- (9) OSHA 501.
- (10) Range Safety.

*b.* Other courses, such as Hospital Safety, are being developed.

*c.* The USACRC developed the Safety Intern (CP-12) Training Program to provide safety professionals with the level of training required to enter the safety profession (see table 3-1). This program of study is augmented with select work assignments designed to provide the novice safety professional with experience that will produce an individual well trained in safety. Admission to this program is based on the individual having achieved certain minimum levels of training and expertise.

*d.* The CRC has provided information and links to training on their Web page, <https://crc.army.mil>. These links

cover the range of training required for safety, including OSHA, Department of Transportation (DOT), Army, and other service training.

### **7-3. Safety training for non-safety professionals**

*a.* Appendix C contains matrixes that identify training recommended for employees, supervisors, employees working in specific environments, maintenance and facilities employees, and for emergency preparedness and response personnel. In addition to identifying the training required, the matrixes identify the frequency of training required (upon assignment, annually, and so on).

*b.* Radiation training is as follows:

(1) The training and experience of the Radiation Safety Officer (RSO) and the alternate RSO (ARSO) must be commensurate with the radiation program for which they will be responsible with formal radiation training completed before assuming duties. The dynamic response aspects of the radiation protection program require that each garrison RSO will be provided radiation protection training annually to ensure that he/she is adequately trained. Annual training will be scheduled and funded by the commander in accordance with DA Pam 385-24.

(2) Annual radiation safety training for staff users of radioactive material and sources will be scheduled by the RSO and funded by the commander in accordance with DA Pam 385-24. Individuals who have not yet completed the training may work under the direct supervision of staff already certified as radiation workers (that is, laboratory supervisors) in accordance with DA Pam 385-24.

*c.* The U.S. Army Center for Health Promotion and Preventive Medicine (USACHPPM) offers several courses that provide additional safety and occupational health training. A list of some of the courses offered by USACHPPM is located in paragraph C-2, while their Web site, <http://chppm-www.apgea.army.mil/>, contains the full schedule of courses and prerequisites.

*d.* The USACRC also offers courses in accident investigation for personnel who may have to investigate an accident. The courses range from a member to president of an accident investigation board. Details are available on the USACRC Web site at <https://crc.army.mil/>, "Accident Reporting & Investigation", in the "Tools" link.

*e.* Traffic safety programs and educational material are available from the USACRC.

*f.* USACRC offers two courses on CRM located in the Army Core Courses file in the USACRC CRU. These courses are also offered on-site by the Professional Development Mobile Training Team (MTT).

(1) One course, CRM Basic Course, is oriented to leaders, providing the information to successfully apply CRM to mission planning and execution.

(2) Another, slightly longer course, CRM Operational Course, is targeted to sergeants and staff sergeants who will be able to integrate CRM into their daily work and activities to better identify hazards on ranges, daily garrison operations, convoys and high-risk operations.

*g.* Personnel appointed as Unit Safety Officer/NCO as an additional duty must complete the USACRC University Web based on-line "Additional Duty Safety Course".

## **Chapter 8**

### **Safety and Occupational Health Hazard Identification and Abatement**

#### **8-1. Introduction**

*a.* The workplace will be free of recognized hazards that may cause serious injury or death. Army leadership will ensure hazards are eliminated or reduced to the lowest possible risk level. This requires the safety manager to work in collaboration with the industrial hygienist, the occupational health nurse, fire department, facility engineers, the radiation protection officer, and other professionals to develop and execute safety and health programs that identify and minimize risk.

*b.* Safety in the workplace is enhanced when regular (at least annually, but more frequently for high risk workplaces) inspections are conducted to ensure that all safety standards and procedures are being followed. This chapter provides guidance in implementing the requirements of AR 385-10, chapters 16, 17, and 18. The Safety Program, at each command and installation, must be evaluated on an annual basis, or more frequently if required, as part of the overall Army effort to ensure that safety programs are targeted at the highest risk areas and that they are staying on target with stated goals and objectives. When evaluating the safety program of an organization it is necessary to involve the members of that organization in the process.

#### **8-2. Workplace inspection and safety and occupational health programs/assessments/inspections/reporting**

*a.* Safety programs, like all Army programs, will have controls established to ensure implementation of regulatory and statutory rules. The controls will be developed and coordinated with the organizations/units involved, the command

group, legal, and other interested parties as determined by the commander. Once agreed to, the controls will be incorporated into the appropriate safety plan/program.

b. The SOH manager will determine the optimal schedule for safety program evaluations and will submit the schedule for safety evaluations to the commander for approval. The schedule will be coordinated with all involved parties prior to presenting to the commander for approval. Once the safety evaluation schedule has been established, the Safety Office will schedule personnel to support the safety evaluation process. Results of each evaluation will be provided to the organization/unit being audited for comment prior to being presented to the commander.

c. The first line of safety consists of the inspections performed by the supervisor. The supervisor has the responsibility of ensuring that the work place is free of known hazards and that procedures are being followed by workers. The supervisor's inspections tend to be less formal, with corrective action taken immediately. When corrective action requires resources greater than the supervisor has immediately available, a work order (or similar document) should be prepared to obtain the necessary help to fix a problem. Workers also have a responsibility to report unsafe or unhealthy working conditions that they may uncover in their day-to-day activities. The Department of Labor (DOL) on the OSHA Web site, [www.osha.gov](http://www.osha.gov) has "Tools for a Safety and Health Program Assessment." This Web site provides guidance that the safety manager or supervisor may use for their internal inspection. Three basic areas should be checked for effectiveness, these include—

(1) Documentation activity.

(2) Employee knowledge (ensure employees are knowledgeable of safety and health programs through direct interviews with employees).

(3) Site review for hazards, verify and appropriate safety equipment, correct use of safety equipment (including PPE) and on-site documentation (materiel safety data sheets (MSDS), emergency phone numbers, SOPs, and so on).

d. The safety manager will perform internal assessments and inspect various aspects of the program throughout the year, using approved metrics to evaluate the status of program implementation within the organization. Each installation/command's SOH program will be assessed on a regular and continuing basis. These metrics, approved by the commander, will provide the necessary level of insight into the SOH program. Note: If required, the remarks block will be used to expand on corrective actions status. Information may include details on progress in developing the corrective action, reason for delays (both in developing and implementing), and actions that are being taken to expedite development and implementation of the corrective action. Additionally, information on how well the program is working to ensure the quality and effectiveness of the local SOH program will be assessed.

e. When the SOH program is of sufficient magnitude and/or significance, the procedures set forth in the following paragraphs should be implemented. For a small operation, one or two person safety office at a small installation, these procedures should be tailored to reflect the size of the program. For instance, instead of a "team" performing an inspection it may only be necessary to have one safety professional perform the inspection.

f. An independent inspection of the installation/command safety and occupational health program will be conducted by a team dedicated to that purpose. The composition of the team should be representative of the technical and managerial requirements of the program. While it is most desirable for the SOH inspection to be performed by an experienced and dedicated group of SOH professionals, an Inspector General (IG) or Army Audit Agency (AAA) inspection/audit may also serve to provide the assessment required.

g. The SOH inspection, when conducted by professionals in the SOH area, will apply accepted analysis and data gathering techniques to ensure unbiased and accurate information.

(1) The team will gather data from a variety of sources. Using the most appropriate instrument for each data source. Appendix D provides the procedures that have been designated as Standard Army Safety and Occupational Health Inspections (SASOHI) that are mandatory and will be followed on selected installation-level inspections.

(2) In addition to the procedures stated in paragraph 8-2g(1), other information and data may be collected as determined by the safety manager/inspection team. For example, to obtain information on how the safety program is impacting POV driving habits, the team may develop and conduct a survey of licensed drivers assigned to the installation, direct interviews of a statistically valid sample of drivers and a review of accident statistics.

(3) Each source of data will be correlated and compared with the others to obtain the most accurate possible assessment. Not all aspects of a SOH program will have as many potential ways of obtaining data. Data collection must be tailored to for each program element.

(4) During the inspection process, the inspection team will review the written and approved SOH plan. The team will also discuss the plan with the safety manager and his staff to gain a full understanding of the plan and the reasoning behind the approach set forth in the plan. When possible, the commander will be interviewed to obtain his insight and intent for the SOH plan for his installation/command.

(5) During the analysis process, historical data will be used as well as data collected by the team. Whenever possible previous year(s) data will be evaluated and analyzed in context with the current year to determine if a trend is present. Care should be taken to ensure that the data from each year are compatible (for example, same definition of each data element, collected the same way).

(6) Once the data collection and analysis process is completed, the team will meet to discuss the findings. This discussion will be led by the team leader and will provide for open and frank debate of the findings. The consensus

results will be documented and used for the report. If consensus cannot be reached on any particular issue, the team leader will make the final determination.

(7) The results of the SOH inspection and assessment will be documented in a report. The results of inspection report will be a stand alone document that addresses—

- (a) Purpose of the inspection.
- (b) The data collection process/procedures used.
- (c) Analysis techniques applied
- (d) Findings from the inspection and analysis.

(8) The report will be provided to the safety manager for the installation/command being inspected for review and comment prior to being published.

*h.* The DOL/OSHA may conduct inspections at anytime in accordance with DODI 6055.1 and 29 CFR 1960. For DOL/OSHA inspections the procedures set forth in appendix F will be followed. Any deficiencies found during these inspections will be corrected as soon as possible (immediately if possible). Actions will be tracked and reported to the commander until satisfactorily completed.

### **8-3. Standards**

*a.* Occupational safety and health inspections will be conducted to evaluate how well safety and health standards are being implemented and maintained. Standards have been established by the Army, DOD, and OSHA to ensure that workers are provided a safe and healthy environment in which to work. The standards that have been established are generic to apply to different types of work environments, such as offices, manufacturing, construction, range operations, and so on. Since the standards are generic in nature, they must be adapted to the specifics of each workplace. The Safety Office will take the lead in ensuring that standards have been developed and published for each workplace within their area of responsibility.

*b.* Inspection procedures will be developed that ensure a fair and unambiguous inspection that determines how effectively safety and health standards are being followed. The procedures will be tailored (or will allow for tailoring) of the inspection process to the mission, size, and complexity of the workplace being inspected.

*c.* Each type of workplace to be inspected has specific safety requirements that must be met. For example, a biological defense laboratory has very specific guidelines that must be followed. These guidelines, set forth in DA Pam 385-69, the Center for Disease Control (CDC), Prevention's Biosafety in Microbiological and Biomedical Laboratories, the National Institutes of Health (NIH) Guidelines for Research Involving Recombinant DNA, and other Federal, state, and local laws and regulations must be adhered to for the various type of biological laboratories and their level of operations.

*d.* Other work sites, such as offices require safe operating conditions as well. Factors such as adequate lighting, noise levels, furniture that is ergonomically sound, and so on, are considerations for office safety. Construction sites will follow the requirements of Corps of Engineers Manual EM 385-1-1, OSHA Standards, as well as other pertinent laws and regulations.

(1) Each inspection will be planned with guidelines developed to lead the inspectors through the process. The guidelines will address major areas of safety. They are used to focus the attention of the inspection team on critical areas where historical data identifies higher risk. The inspection teams will systematically exam the work site, making note of deficiencies and their potential harm. The inspection team will have available the equipment (that is, light meters, decibel meters, electrical testing equipment) that is needed for the inspection. The team will use the appropriate PPE required for access to the work site. Area inspection guidelines will ensure—

- (2) The policy for operation focuses on safe and healthful operations.
- (3) The definitive goals for safety and health have been established.
- (4) The managers and supervisors are dedicated to safety.
- (5) All employees are accountable for safe operations.
- (6) The hazard analysis has been performed and been updated regularly.
- (7) The employees identify any hazards and they are acted upon in a timely basis.
- (8) The employees are trained in safety and proper procedures to follow in event of an incident. Records are maintained to document employee safety training.
- (9) All accidents and near accidents were investigated promptly and thoroughly.
- (10) All accidents were reviewed to determine if any patterns or trends are evident.
- (11) The preventive maintenance was performed to maintain equipment in safe operating condition.
- (12) An emergency plan has been prepared for potential emergencies and employees have been briefed on what they are to do in the event of an emergency.

(13) The employees know about hazards at the work site and understand what they may be exposed to and how to react if exposed to particular hazards.

(14) The managers and supervisors understand their responsibilities to ensure a safe and healthful workplace environment.

e. This list is extracted from the OSHA Web site and should be expanded or tailored as necessary to meet the unique requirements of each inspection.

f. The inspection team will prepare a report of their findings. This report will describe conditions of the workplace, both positive and negative.

(1) Negative safety findings will be completely defined, the possible consequences of each delineated, and any corrective actions described (if not available, the report will establish responsible parties for developing the corrective action and the date each action must be available).

(2) The corrective action will include short-term and long-term actions when necessary. Findings of critical safety deficiencies, for example, possible serious injury or death or destruction of Government property will be directly communicated to the commander, the facility/command safety officer (if not a member of the inspection team) and the supervisor of the work site with the recommendation that work cease until critical deficiencies are corrected.

#### **8-4. Army employee hazard reporting**

a. Procedures for employee reports of hazards will be established in accordance with DA Pam 385-40, 29 CFR 1960.28 and 29 CFR 1960.46. Reports under these procedures will be completed on DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions) (see app H for a sample form). Normally, reports will be signed; however, anonymous reports will be investigated in the same manner as other reports. Reports can be submitted directly to the installation SOH official, to the appropriate tenant SOH official, or through supervisory and command channels. DOD safety managers will post DD Form 2272 (Department of Defense Safety and Occupational Health Protection Program) in all industrial workplaces (see app E).

b. Names of people submitting signed reports who request anonymity will not be revealed by the installation SOH official to anyone other than necessary members of their staff or other appropriate installation-level staff.

c. If reports that appear to involve an imminent danger situation are submitted, the inspector should—

(1) Notify the immediate supervisor and activity head as soon as possible.

(2) Provide technical advice to the supervisor on the scene, who will correct the condition or cease operation and withdraw personnel from exposure.

(3) Notify the installation safety and occupational health official if the hazard cannot be immediately eliminated. If this official finds that corrective action is inadequate, appropriate measures will be taken to prevent employee exposure to the hazard. The commander or an authorized representative of the commander will be notified immediately.

(4) Follow the 29 CFR 1960.28.

d. All reports will be investigated by safety or health personnel. The originator, if known, will be notified in writing of the results of the investigation within 10 working days of receipt of the hazard report. If the 10-workday suspense cannot be met, the originator should be provided an interim response.

(1) If it is determined that a hazard exists, the reply will include a summary of the actions to be taken and anticipated date for corrective action. Procedures for inspections outlined above will apply, if appropriate.

(2) If it is determined that a hazardous condition does not exist, the reply to the employee will include the basis for that determination. This reply will encourage informal contact with installation safety and health officials if additional explanations are desired. It will also inform the individual of their right of appeal as outlined below. Every effort, to include consulting with a regional Federal OSHA office and requests for technical advice from the USACHPPM, or the USACRC will be made to resolve the originator's questions or dissatisfaction.

(3) If a hazard report also involves a grievance action, the local SOH manager will determine if there is a need for priority action for safety or health reasons.

e. If the originator is dissatisfied with the SOH official's response, the originator may appeal to the installation commander. The installation commander will review the finding and take appropriate action. If the originator is dissatisfied with the installation commander's response, the originator may appeal to the Army Headquarters SOH official. Such appeals will be transmitted through channels to the Army Headquarters, which will review the finding, investigate as necessary and verify the appropriateness of the installation-level response. If the report of hazard is judged unfounded, a reply to the originator rejecting their appeal will explain the basis for the rejection and will advise him or her of their right to appeal to the Army-designated safety and occupational health official Assistant Secretary of the Army for Installations and Environment (ASA(I&E)). Upon receipt of an appeal, this official will review the case and reply to the originator with a statement of findings. If the appeal is rejected, the reply will advise the originator of their right to further appeal according to 29 CFR 1960 to the DOD-designated occupational safety and health official.

f. Although personnel have the right to report hazards directly to DOL, they are encouraged to follow the review levels prescribed in this chapter. Reports received directly by DOL will be forwarded to DA for handling in accordance with these procedures.

g. Copies of reports submitted under the Army employee hazard reporting system will be retained at the installation safety office and a Federal Record Retention Center for at least 5 years following the end of the calendar year to which they relate.

## 8-5. Abatement plan/tracking corrective actions

The report from the inspection team will be used as input to a database that will track deficiencies and the corrective action(s) associated with each deficiency. An analysis of all hazards will be made to determine the degree of risk using Army approved risk assessment techniques. The procedures below will be followed in analyses of safety hazards. Each hazard will be assigned a priority for correction that is based on the criticality of the system.

*a.* Hazards will be assessed (terms of hazard severity and accident probability) and assigned a risk assessment code (RAC). Cost of correction, future intended use of the facility, and availability of desirable alternative methods of control will be considered. Coordination will be effected between fire department and SOH personnel to ensure that hazards identified by those organizations are entered into appropriate abatement plans according to AR 420-90.

*b.* Hazards should be eliminated on a worst-first basis. An abatement plan must be prepared for each RAC 1 or 2 hazard whose correction will exceed 30 days. Individual deficiencies of an identical character may be grouped together into a single abatement plan or into an associated abatement project. The plans will be kept current by adding new projects and by placing completed projects in a completed projects section of the abatement plan. Corrections of violations that have a high dollar cost can be included in the abatement. The command element involved will approve abatement plans.

*c.* Procedures such as spot checking or sampling will be used to ensure that interim control measures are being implemented.

*d.* Copies of abatement plans will be posted.

*e.* Violations that are the responsibility of another ACOM or installation, DOD, or outside agency will be brought to the attention of the responsible official for action.

*f.* Army Headquarters representatives will review installation abatement plans at least annually to ensure adequate resource allocation and ensure nonresource-intensive corrective actions are accomplished. These plans are also subject to review by HQDA, OSHA, and union representatives.

*g.* A database will be established that will be used to track the inspection team's findings and corrective action status from the abatement plan. At a minimum, the database will include the following data elements:

- (1) Finding number (or other identification method).
- (2) Priority of finding.
- (3) Risk level.
- (4) Description of finding.
- (5) Risk consequence.
- (6) Person(s) responsible for corrective action.
- (7) Corrective action description.
- (8) Corrective action status.
- (9) Remarks. (Note: If required, the Remarks block will be used to expand on corrective actions status. Information may include detail on how development of the process is progressing, reasons for delays (both in developing and implementing), and actions that are being taken to expedite development and implementation of the corrective action).
- (10) Date of last update briefing to commander (when corrective action has been implemented and briefed to the commander this block will be closed).

*h.* The status of the abatement plan/corrective actions will be informed to the commander upon completion of the inspection and on a regular basis thereafter until all high priority corrective actions have been implemented. Lesser priority corrective actions implementation progress will be reported as directed by the commander, through periodic briefings or written reports. The DA Form 4754 (Violation Inventory Log) (see app G) will be used to provide ready access to violation abatement status.

*i.* The commander has the responsibility of ensuring that corrective actions are implemented in a timely fashion to reduce risk from hazards identified during the inspection.

*j.* Hazard abatement funding will follow these procedures—

(1) Operating plans and budgets will include appropriate planning, programming, and resources to correct RAC 1 and 2 hazards from the abatement plan according to abatement priority numbers and any supplemental DA program guidance. When abatement projects require military construction funds or exceed local funding ceilings, the local commander will submit appropriate funding requests through command channels.

(2) Funding will be accomplished generally from local operations and maintenance monies or overhead funds in industrially funded activities. Installations that are research, development, test, and evaluation (RDTE) funded will program funding for hazard abatement.

(3) All construction and modernization projects are required to incorporate life safety, explosives safety, fire prevention and other SOH standards. Many existing hazards are abated as a by-product of new construction that has been justified for other reasons. However, military construction projects whose paramount justification is abatement of such hazards normally do not involve new construction; they typically consist of retrofit of one or more existing facilities, such as the installation or replacement of ventilation systems in places where toxic chemicals present hazards.



(4) Army Headquarters, IMCOM, and other commands, agencies, activities, as appropriate, will account for actual expenditures for hazard abatement projects at all echelons of command.

## **8-6. Department of Labor/Occupational Safety and Health Administration inspections**

*a.* DOL representatives will be admitted to conduct inspections at selected workplaces in a reasonable manner without delay during normal working hours.

*b.* DOL representatives will initially report to the host installation commander or designated representative and will be accompanied at all times on the Army installation. They will be required to show proof of appropriate security clearance if entry into closed areas is required. A closing conference with the installation or activity commander or command designee will be arranged before the DOL inspector's departure. Employee representatives will be invited to attend the opening and closing conference.

*c.* DOL representatives will, upon request, be provided available safety and health information on worksites to be visited. Such information may include data on hazardous materials in use, copies of recent DOD inspection or survey reports, accident reports, and abatement project information.

*d.* When DOL representatives issue an OSHA-2H Form (Notice of Unsafe and/or Unhealthful Working Conditions), local officials should treat such notices in the same manner as similar internal notices and provide for abatement of significant deficiencies. Installations that receive an OSHA-2H will immediately transmit copies through command channels to HQDA (DACS-SF) Washington, DC 20310-0300, and copy furnished to Commander, USACRC (CSSC-PR), Fort Rucker, AL 36362-5363. The OSHA-2H will assist in developing appropriate DA policy in the SOH program.

*e.* Response to DOL inspection reports will originate at the local level. Elevation of unresolved conflicts to higher echelons for interagency resolution will be at DOL's initiative via DOL channels. This provision, however, will not inhibit normal internal communication within command channels to appraise higher echelons of the results of DOL inspections and coordinate responses to DOL.

*f.* With respect to investigation of Army accidents, which is solely a DOD responsibility under Executive Order 12196, DOL officials may be shown or provided factual portions of pertinent accident investigation reports as outlined in DA Pam 385-40. DOL officials, upon request, may also be authorized to accompany Army accident investigators in an observer status. Separate, duplicate DOL investigations of Army accidents, either concurrent with or subsequent to required Army investigations, are not expected. DOL officials may, however, inspect for residual hazardous conditions at the site of an Army accident.

*g.* Inspection of contractor workplaces by Federal and state will be accomplished according to DODI 6055.1 and 29 CFR 1960.

## **Chapter 9**

### **Standing Operating Procedures for Hazardous Operations**

#### **9-1. Introduction**

*a.* Every effort is taken to eliminate, control, or reduce hazards and associated risks through other methods of the correction precedence. However, far too often reliance must be placed on adopting procedures as a control method. Therefore, it is important that a method be established to ensure tasks are executed in an efficient, effective, and safe manner.

*b.* SOPs are written procedures that must be followed when performing a task. An SOP is required when tasks are complex or involve hazardous materials. A correctly developed SOP leads to work that is performed satisfactorily and efficiently, with minimal risk, and the highest possible levels of safety. An SOP should be designed to provide safety, security, and environmental protection.

#### **9-2. Purpose**

This chapter establishes a requirement for SOPs and describes a method for ensuring that hazardous operations are performed in an efficient, effective, and safe manner based on collective experience and knowledge. Agreement by the SOP developers will be based on their assessment of the safest and most logical way to perform a given task. This chapter provides guidance in support of AR 385-10, chapter 18.

#### **9-3. Applicability**

This section of the pamphlet applies to all Army hazardous operations involved in execution of missions and processes except for administrative tasks. Written standards (for example, work plans, internal operating plans, operating manuals, work instructions, FMs, and so on) may be substituted for SOPs when they provide the necessary level of detail to execute the task in an efficient, effective and safe manner.

#### **9-4. Standing operating procedure requirements**

A well-written SOP provides detailed procedures. The net result of following an SOP is a product or service that is consistent in quality and that is the same as other items produced in the same manner. The SOP has to meet certain criteria to be acceptable. These criteria include—

- a.* The steps must be in logical sequence. Work space and equipment being used must be available for the work process. The SOP should include initial steps that are required for obtaining the necessary equipment, or verifying that it is present and operational.
- b.* The safety procedures have to protect the worker and the environment throughout the process.
- c.* Risks must be identified and the appropriate steps required to mitigate the risks included and explained.
- d.* The process set forth in the SOP should be the most efficient possible that results in a useful outcome/product.

#### **9-5. Standard operating procedure developers**

The first step in the SOP development will be to assemble a team of personnel with experience and expertise in operation being documented to conduct the hazard assessment and develop the SOP. When dealing with hazardous substances (see Part 1910.1200, Title 29, Code of Federal Regulations (29 CFR 1910.1200)), SOPs will be coordinated with the appropriate Federal, state, and local emergency response authorities (for example, law enforcement, fire departments, emergency medical service and hospitals) and any established Local Emergency Planning Committees (LEPCs).

#### **9-6. Writing the standard operating procedure**

When writing an SOP, the author must take into account the work environment, the supplies needed to perform the task, safety equipment and clothing, and type of hazard. The SOP should meet the guidelines set forth in paragraph 9-4. An SOP requires the talents of several people. The writer must work with knowledgeable people from safety, environmental, logistics, quality assurance, fire and emergency services, engineering, production, and so on.

*a.* The first step in writing the SOP is to observe the worker demonstrating how the task is to be performed. Since this discussion concerns hazardous material, the worker will walk through the steps without actually performing the task and not using hazardous material during the walkthrough. The worker performing the task must be knowledgeable of what is required. The worker's supervisor should be part of the walkthrough to ensure that no steps are overlooked and to provide higher levels of assurance that the process is being performed correctly.

*b.* During the walkthrough the safety person will observe and make note of any hazards that may occur during the task.

(1) The hazard assessment of the task (see DA Pam 385-30) will be documented as part of the SOP. Countermeasures to eliminate or control the hazards should be developed based on the Correction Precedence.

(2) Included in control and/or elimination of hazards will be the need for specific PPE and other protective equipment. The process engineer should be involved to provide insight on the proper use of equipment and the procedures to be followed should an anomaly occur (for example, pressure unit begins to approach dangerous operating levels) and the steps to be taken to rectify the situation. The effect of these anomalies on the process will be determined, as well as any changes in the level of risk.

*c.* A description of each step in the task should be broken down into the smallest sub-steps required to clearly and completely define the flow of the task. Procedures will fulfill the following criteria:

- (1) Procedure successfully directs the users to accomplish its objective.
- (2) Procedures are usable.
- (3) Procedures are accurate.
- (4) Procedures are written in accordance with appropriate standards and regulations.
- (5) Procedures contain the appropriate level of detail and present all-important information without presenting superfluous information.
- (6) Equipment labels and markings cited in the SOP correspond with actual hardware.
- (7) Procedures will be written in short, simple words and sentences using a vocabulary appropriate for the task performer.

(8) For SOPs that address tasks in areas containing munitions or explosives, contingency planning, emergency preparedness and security will be addressed. Procedures for promptly notifying emergency response and environmental agencies should an accidental detonation occur will be clearly stated in the SOP.

*d.* The draft SOP will be reviewed for completeness and accuracy by subject matter experts both within and external to the performing organization. Each step of the procedure should be included, along with the safety precautions and equipment (both PPE and other required at each step). Once the SOP has been through an informal "desk top" review, the final draft will be prepared.

#### **9-7. Review-concurrence**

- a.* A process will be developed to have component personnel with specialized knowledge (safety, environmental,

logistics, quality assurance, fire and emergency services, engineering, and so on) review the SOP for clarity, compliance with standards and regulation, and conformity with accepted practices in their specialty area. After review and update, an operator should walk through the process with the SOP open. The SOP will be followed step-by-step in performing the task. This final verification is required before the SOP can be finalized.

*b.* The cover sheet with the draft and final version of the SOP will contain the following information:

- (1) Activity name.
- (2) Name of process.
- (3) Unique SOP number.
- (4) Date of SOP.
- (5) Name of preparer, title, and phone number.
- (6) Signatures of individuals and their office titles responsible for reviewing and concurring with SOP (safety, environmental, quality assurance, fire and emergency services, engineering, and so on).
- (7) Name and title of approving authority and date of approval.

*c.* Component personnel will concur with the SOP prior to the SOP being signed by the approving authority. Once the SOP has been checked, evaluated and verified using the above procedures, it will be published and used to ensure a consistent and safe process and product.

### **9–8. Review date**

Each activity will establish a method for reviewing and revising SOPs based upon the complexity and hazardous-nature of the process. The review cycle should not exceed two years for any SOP.

### **9–9. Supervisor statement**

A method will be provided for the signatures of supervisors or person-in-charge indicating that they have read the SOP; understand operations involved in the task; have verified that the operators are trained in and understand the SOP; and that the task can be executed in a safe and efficient manner. The supervisor/person-in-charge should sign the statement when—

- a.* First assigned to supervise the task.
- b.* Beginning an operation that is intermittent and has not been performed for 90 days.
- c.* A change is made to the SOP.
- d.* At least annually when an operation is performed on a continuous basis.

### **9–10. Operator/task performer statement**

A statement will be provided and provisions made for the operator to sign under the statement. The statement will attest to the fact that they have read or have had read to them and understand the SOP. The task performer will sign the statement page when—

- a.* First assigned to the task.
- b.* Prior to beginning an operation that is intermittent and has not been performed for 90 days.
- c.* When a change is made to the SOP.
- d.* At least annually during continuous operation.

### **9–11. Accessibility of standing operating procedures**

SOPs for the task being executed will be readily available to the supervisors and operators. For explosives and chemical operations the SOP will be posted in the work area.

### **9–12. Standing operating procedure index**

An index will be maintained of all approved SOPs and will contain the following information:

- a.* SOP number.
- b.* Title of SOP.
- c.* Name of office submitting SOP.
- d.* Date of approval.
- e.* Next review date.

### **9–13. Confirmation of use**

Supervisors will use the SOP during training of employees. During day-to-day operations, the supervisor will verify that SOP requirements are being followed by operator personnel.

## Chapter 10 Emergency Planning

### 10–1. Introduction

Emergency Planning establishes the procedures and processes that an organization will follow when responding to an emergency. The goal of emergency planning is to protect life, health, property, and to restore normal operations as soon as possible. The emergency planning process is documented in the emergency plan. The emergency plan should address immediate response actions to protect life and property and longer-term actions to manage full recovery operations, whether the incident has only local effects or has impact on a broader, regional, or even national basis. The goal is to provide short-term relief immediately while putting into place the necessary actions to maintain or restore full operational capability. This chapter provides general principles that should be followed when developing an emergency plan, as required in AR 385–10, chapter 19.

### 10–2. Functions

During emergencies, there is often the need for action from many different responders. Personnel and equipment from police, fire units, engineering, facilities maintenance/public works, medical, recovery, hazardous material (HAZMAT) response teams, explosive ordnance disposal (EOD), public affairs, and other specialties may be required to respond, depending on the nature of the hazard.

*a.* The commander will ensure that emergency preparedness is part of the command's critical operations and will receive reports of the status of emergency preparedness and associated planning on a regular basis. One means of ensuring the effectiveness of emergency planning is to have regular exercises to test planning. At a minimum, command post exercises (CPXs) should be conducted on an annual basis, and a full operational exercise involving all elements of the plan should be conducted every three years, or shortly after a major revision of the plan.

*b.* The commander will ensure that there are resources available to execute the emergency plan. Resources that must be available are determined by the hazards addressed by the emergency plan, but generally will include emergency response personnel and equipment (fire, police, medical, and so on), support (kitchen, housing, utility, and so on), press relations (newspaper, television, radio) and management (someone in charge).

*c.* A good emergency plan will address each threat or hazard that has been determined to be a valid risk. These may include such elements as natural disaster (tornado, hurricane, earthquake, and so on), accidental release of hazardous material (chemical, POL, radiological, and so on), accidents (aircraft crash, ground vehicle crash, and so on), fire, mass power outages, and other viable elements. The emergency plan will address each threat that has been determined to be a viable risk; appendixes may be used as necessary.

*d.* The emergency plan will also address the process to be followed to return to normal operations. For minor incidents, the return to normal operations may not require major effort.

(1) A major incident (generally one that cannot be resolved by routine emergency response arrangements) will most likely require the implementation of special procedures to return to full operation.

(2) The emergency plan will provide the guidance required to establish the mechanism for recovery. For example, the loss of hangers and aircraft from a tornado requires an extensive effort to return to combat ready status that may include requesting budget assistance from DA and DOD. Recovery from the loss of a single vehicle obviously requires a much smaller commitment of management and personnel to recover.

(3) Emergency planning must take into consideration the surrounding civilian community and the environment. Planning for major incidents may include coordination with civilian authorities to share resources (both to and from the civilian community as required). Volunteer organizations, such as the Salvation Army and Red Cross may also become elements of the response and recovery operation. Coordination with civilian Government organizations (city, county, state and national) should be part of the emergency planning process.

(4) Emergency planning must consider devolving to an alternate location if all operations cease, and all or most employees are incapacitated at the affected location.

### 10–3. Elements of emergency planning

*a.* Emergency planning and preparedness have as the basis of the process a need for speed and flexibility at the local operational level, the ability to provide assistance across organizational boundaries (military-civilian and so on) and an ability to manage the operation to provide operational, tactical and strategic guidance as necessary. Emergency planning is not a one time thing. An emergency plan must be reviewed and updated regularly as new threats and hazards become known and as old ones become less of a risk. There are four parts to emergency planning.

*b.* Risk assessment is the first step in emergency planning. Risk assessment begins with identifying the hazards present in the organization/command and its operational environment, including combat associated hazards. Each hazard—

(1) Will be studied and ranked according to the risk proposed by the hazard.

(2) Will assess the personnel, equipment, facilities and other infrastructure that are vulnerable.

(3) Will have a written hazard analysis prepared that quantifies the overall risk to the organization/command for

each hazard. By quantifying the risk, emergency planning can be based on realistic threats and be made proportional to the risk.

c. Each organization and sub-organization needs to undertake its own risk assessment to develop the appropriate response to the hazard and to more appropriately contribute to the overall emergency plan. The hazard analysis will answer the following type of questions:

- (1) What can occur? (Identify the hazards including natural, terrorist threats, man-made.)
- (2) How often it is likely to occur? (Profile each hazard including magnitude, duration, speed of development and seasonal pattern.)
- (3) What damage is it likely to cause? (Develop an installation/command/ community profile that addresses geography, property, infrastructure, demographics and resources available.)
- (4) How it is likely to affect the community? (Determine vulnerability using standard categories: catastrophic, critical, limited, and negligible.)
- (5) How vulnerable the installation/command/community is to the hazard? (Create and apply scenarios that address first warning of emergency, potential impact, potential damage/causalities/loss of services, and actions/resources needed to respond to the emergency.)
- (6) Developing the Emergency Plan, including functional annexes, hazard-specific sections, and implementing instructions commences as the hazards and associated risks become known. Included, as an essential part of the plan should be plans for eliminating, reducing, controlling or mitigating the effects of each hazard. The emergency plan has to address the action(s) required in case of an incident.
  - (a) Define the response that will be made to the incident, incorporating the rules of integrated emergency management (assess the incident, prevention actions, preparation required to respond to an incident, the response mechanism, and plans to recover from the incident).
  - (b) Incorporate the protocols for working within different functions and commands and civilian agencies and Government (as appropriate).
  - (c) Identify technical experts in all possible areas where that may be needed and the procedures for contacting and obtaining their input (technical experts include not only how to physically deal with the incident, but with crowd control/policy action, public affairs, and so on).
  - (d) Describe the process for recovery and restoration to return to full operationally ready status.
  - (e) The plan should be compatible with commands/organizations above/below the actionable command and with surrounding community.
  - (f) The plan should be in compliance with all laws and Federal regulations.
  - (g) The plan should be tested on a reviewed by experts, signed by the commander, and tested on a regular basis.

d. Continuity of operations (CONOPs) should be part of the planning process. As noted above, the emergency plan has to address the process by which the command will either remain in operational status or return to operational status as soon as possible. The emergency plan should address human resources, devolution, alternate facilities, facilities, logistics, equipment, utilities, communications, and chain of command.

(1) The plan should include references to all laws, regulations, executive orders, and other authorities that form the legal basis for the plan.

(2) Testing the emergency plan is an essential part of the planning process. It is through testing, both CPX and operational type of testing, that weakness are most likely to be uncovered. Areas where the plan is unclear—not providing sufficient guidance and areas where the plan does not work—will surface during testing. From testing lessons learned are produced that can then be used to adjust and modify the plan.

(3) Review and update the plan regularly to reflect changing hazards, technology and resources. An updated emergency plan should reflect the most recent information available about every hazard in the original plan, as well as including hazards that may have entered into the picture since the plan was first drafted.

#### **10-4. Coordination**

a. Emergency planning has to be a team effort. A typical emergency planning team will consist of representatives from all aspects of the command, and the civilian community (as required). Different aspects of the plan require input from different specialty areas. Expertise may be required as the hazards are incorporated into the emergency planning process such as—

- (1) Police.
- (2) Fire.
- (3) Medical.
- (4) Hazardous material coordinator.
- (5) Aviation.
- (6) Safety.
- (7) Radiation safety officer/health physicist.

- (8) Public works.
- (9) Community affairs.
- (10) Public information office.
- (11) Environmental office.
- (12) Legal office.
- (13) Others (including surrounding civilian community representatives).

*b.* The emergency plan has to be coordinated with all involved agencies within the installation/command/organization. The final plan will be approved and signed by the commander.

(1) During the coordination process every effort should be made for all members of the team to agree on terminology, mission, and a commitment to rapid and full response to maintaining and validating the plan.

(2) The team has to agree on the command structure that will be put in place should an emergency occur. Agreement by each element of the response team to implement the plan and follow-through as required is essential and must be part of the coordination effort.

(3) Once the emergency plan has been approved it will be distributed to all organizations involved in the emergency planning effort. The letter distributing the plan should be signed by the commander and include instructions for all elements of the command to implement the plan.

## **Chapter 11 Emergency Response for Conventional Munitions and Explosives**

### **11-1. General**

*a.* Conventional munitions and explosives are a challenge to those charged with responding to emergencies that involve these items. This chapter outlines the process for preparing the Army response to this type of emergency (see AR 385-10, chap 19). The situations that require the Army to respond to emergency situations are those that arise from—

- (1) Accidents (for example, a carrier of munitions/explosives overturns, training incident).
- (2) Nature (munitions/explosives are disturbed due to earthquake or other natural phenomenon).
- (3) Act of terrorism.

*b.* The Army has the DOD lead in responding to conventional munitions/explosives incidents. The focus of the response is to—

- (1) Save lives and prevent injuries.
- (2) Protect facilities and properties.
- (3) Maintain security and to minimize public inconvenience.

*c.* It is Army policy to maintain an aggressive safety program to prevent accidents involving the transportation of munitions and explosives, and to minimize the damaging effects of such accidents when they occur. Army representatives will respond as quickly as possible when alerted that an accident involving munitions or explosives has taken place. This pamphlet applies to—

- (1) All commercial modes of transportation (rail, motor vehicle, air, and water).
- (2) All military vehicles, both administrative and tactical transporting munitions and explosives on public highways, including shipments by military carrier.
- (3) Explosives ordnance disposal (EOD) units who follow established EOD procedures.

*d.* To prevent unfounded public alarm, accidents involving munitions, and/or explosives during transportation will be reported promptly and accurately to the Army Operations Center (AOC). This policy will enable the Army to render effective aid to minimize personal injury and property damage. This policy will also ensure that information provided to the public is accurate and timely at both the local installation and at HQDA.

*e.* The guidance and procedures set forth in this section of DA Pam 385-10 applies to the transportation of DOD conventional munitions and explosives. It does not apply to accidents or incidents that involve the transportation of nuclear weapons, toxic chemical agents, or radiological material. For accidents involving—

- (1) Transportation of nuclear weapons, refer to AR 50-5, AR 385-10, and DA Pam 385-40.
- (2) Toxic chemical agents, refer to AR 50-6, AR 385-10, DA Pam 385-40, and DA Pam 385-61.
- (3) Radioactive and fissionable materials, other than weapons, refer to DA Pam 385-24, DA Pam 385-40, and AR 385-10.

### **11-2. Pre-event planning**

*a.* As with all emergency situations, the planning that occurs prior to an actual event is the first critical step in minimizing the loss of life and injury to personnel and damage to facilities and infrastructure.

b. Planning on how to respond to emergency incidents that involve conventional munitions and explosives begins with the agency that has the responsibility for developing the conventional munitions or explosives.

c. Procedures for safely handling and neutralizing munitions or explosives will be developed simultaneously. These procedures will include how to deactivate the munitions under emergency conditions and information on quantity-distance should the need arise to destroy the device on-site.

### 11-3. Functions

a. When an accident or incident occurs that requires DOD emergency response, the installation commander will notify the AOC furnishing all the information listed in this section that is available. The telephone numbers for the AOC are DSN 227-0218, or commercial 703-697-0218.

b. As soon as possible a follow-up priority, electronically transmitted message will be used to confirm the telephonic report. The AOC message address is HQDA Washington, DC//MOCS-AOC//. Addresses on the confirming message will have the following information addresses:

(1) Chairman, Department of Defense Explosives Safety Board (DDESB-IK), Alexandria, VA 22331-0600, MESSAGE ADDRESS: CHAIRMAN DDESB Alexandria, VA//DDESB-IK//, TELEPHONE: DSN 221-0891 or (703) 325-0891.

(2) Office of the Assistant Secretary of the Army (SAILE-ESOH), Washington, DC 20310-0103, MESSAGE ADDRESS: HQDA Washington, DC//SAILE-ESOH//, TELEPHONE: DSN 225-7824 or (703) 695-7292.

(3) HQDA, Director of Army Safety (DACS-SF), Washington, DC 20310-0200, MESSAGE ADDRESS: HQDA Washington, DC//SAILE-ESOH//, TELEPHONE: DSN 225-7824 or (703) 695-7824.

(4) HQDA, Deputy Chief of Staff for Logistics (DALO-TSP), Washington, DC 20310-5050, MESSAGE ADDRESS: HQDA Washington, DC//DALO-TSP//, TELEPHONE: DSN 224-4083 or (703) 694-74083.

(5) HQDA, Army Operations Center (MOCS-AOC), Washington, DC 20310-5050, MESSAGE ADDRESS: HQDA Washington, DC//MOCS-AOC//, TELEPHONE: DSN 227-0218 or (703) 697-0218.

(6) HQDA, Chief of Public Affairs (SAPA-ZA), Washington, DC 20310-1501, MESSAGE ADDRESS: HQDA Washington, DC//SAPA-ZA//, TELEPHONE: DSN 227-7782 or (703) 697-4482.

(7) Commander, Surface Deployment & Distribution Command (SD-SS), 5611 Columbia Pike, Falls Church, VA 22041-5050, MESSAGE ADDRESS: CDR SDDC Falls Church, VA//MT-SS//, TELEPHONE: DSN 289-1951 or (703) 756-1951.

(8) Commander, U.S. Army Materiel Command (AMCSF), Ft. Belvoir, VA, MESSAGE ADDRESS: CDR AMC Alexandria, VA//AMCSF//, TELEPHONE: DSN 284-9475 or (703) 274-9475.

(9) Commander, U.S. Army Joint Munitions Command (AMSJM-TM/AMSJM-SF), Rock Island, IL 61299-6500, MESSAGE ADDRESS: CDR JMC Rock Island, IL//AMSMC-TM//AMSMC-SF//, TELEPHONE: DSN 793-2989 or (309) 782-2944.

(10) Commander, U.S. Army Aviation Missile Life Cycle Management Command (AMSAM-SF), Redstone Arsenal, AL 35896-5130, MESSAGE ADDRESS: CDR AMCOM Redstone Arsenal, AL//AMSAM-SF//, TELEPHONE: DSN 746-2944 or (205) 876-2944.

(11) Commander, Forces Command (FCJ1-SO), Ft. McPherson, GA 30330-6000, MESSAGE ADDRESS: CDR FORSCOM Ft. McPherson, GA//FCJ1-SO//, TELEPHONE: DSN 367-6839 or (404) 752-6839.

(12) Commander, U.S. Army Combat Readiness Command (CSSC-PR), Ft. Rucker, AL 36362-5363, MESSAGE ADDRESS: CDR CRC Ft. Rucker, AL//CSSC-PR, TELEPHONE: DSN 558-9552 or (334) 255-9552.

(13) Director, U.S. Army Technical Center for Explosives Safety (SMJAC-ES), 1C Tree Road McAlester, OK 74501-9053, E-mail: ES-Hotline@dac.army.mil, TELEPHONE: DSN 956-8919 or (918) 420-8919.

### 11-4. Emergency response

In addition to providing a military officer (major or above) or DA civilian (GS-12 or above) to be the DOD military representative in response to an accident or incident, the supporting installation will also provide communications support and will be prepared to provide public affairs, security (in accordance with AR 190-11) for all sensitive and classified shipments and legal support, as required and available, as part of the DOD response to the accident.

a. Each Army installation will have an officer of rank major, or above, or DA civilian of GS-12, or above, identified who will proceed directly to the scene of an accident/incident. The officer will be in uniform. Once on the scene, the officer will serve as—

(1) The DOD representative to the on-scene civilian officials responding to the incident.

(2) The DOD military representative (remaining in charge of military activities at the scene until relieved by a designated military authority).

(3) The point-of-contact for other DOD teams preparing to respond.

b. Response to the scene of an accident should be made as quickly and safety as possible using the fastest mod of transportation available at the time. The following goals are established for response to a munitions and/or explosives accident:

(1) Military representative and communications element arrive at the accident scene not more than 2 hours after notification.

(2) The EOD team arrives at the accident scene not more than 4 hours after unit notification or as soon as possible.

#### **11-5. Response procedures**

The AOC will coordinate the DOD response until the service response organization is operational. The following procedures will be followed to notify all parties involved in an accident involving DOD munitions or explosives.

*a.* Shipping installations will have emergency telephones manned 24 hours a day (during shipments) to respond to transportation accidents involving DOD munitions.

*b.* Army Headquarters will test their shipping installations at least annually to ensure that the emergency numbers are manned with knowledgeable and responsible individuals or with individuals having immediate access to persons possessing knowledge of hazards and characteristics of hazardous materials being shipped (when shipment is on the road).

*c.* Upon notification of an accident, the shipping installation will establish and maintain voice communications with on-scene civilian officials to assess the situation and provide accurate information and recommendations (for example, public evacuation, toxicity, fire hazard, and personal protective equipment). The shipping installation will immediately notify the AOC at DSN 227-0218 or commercial (703) 697-0218.

*d.* For cases where shipping papers are not available at the site, on-scene emergency responders may contact the Chemical Transportation Emergency Center (CHEMTREC) (commercial toll-free (800) 424-9300); or the National Response Center (NRC) (commercial toll free (800) 424-8802) for assistance with DOD munitions and explosives accidents and incidents. The CHEMTREC and the NRC will connect callers with the AOC, as appropriate.

*e.* If on-scene assistance is required, the AOC will determine the nearest military installation and task the appropriate servicing Army Headquarters to provide emergency assistance and support.

*f.* The AOC will task FORSCOM to provide EOD support as necessary. The EOD unit will dispatch a response team and establish contact with on-scene officials as soon as possible.

*g.* Commercial carriers contracting with DOD will be advised that they will immediately notify the AOC of a transportation accident/incident involving DOD munitions or explosives that requires an emergency response.

*h.* Shipping papers (SF Form 1103 (U.S. Government Bill of Lading) and DD Form 836 (Dangerous Goods Shipping Paper/Declaration and Emergency Response Information for Hazardous Materials Transported by Government Vehicles)) will bear the 24-hour telephone numbers of the AOC and the shipping installation.

*i.* If the National Military Command Center (NMCC), one of the other military department operations centers, or any other DOD component is notified of a transportation accident involving DOD munitions or explosives, and DOD requires an emergency response, the AOC will be immediately notified.

*j.* The AOC coordinate emergency response actions until an appropriate Service response organization is formed and operational. The AOC will transfer the coordination function to the Service response organization after it is functional.

*k.* If the shipment has been identified as Navy or Air Force origin, the AOC may transfer the response coordination function to the designated center for munitions and explosives transportation accidents (Naval Sea Systems Command Duty Officer, commercial: (202) 692-2958 or DSN: 222-2958; and Air Force Operations Center, commercial: (202) 697-6103 or DSN: 227-6103). The Army will assist the Navy, Air Force, and Marine Corps and will provide the support requested by the controlling response coordination center.

#### **11-6. Public affairs and security**

The nearest military installation will be prepared to provide the necessary support to the accident site as required allowing emergency response personnel to accomplish their mission without delay.

*a.* Public affairs and security support are critical elements that have to be provided rapidly to ensure that the accident site is protected and that EOD and other critical personnel are able to do their tasks. Public Affairs personnel are required to be present to work with the media to ensure that accurate information is provided to the public and that EOD and other critical personnel are not distracted from their tasks by having to respond to questions from the media.

*b.* When possible, based on safety, security, and time, the press should be allowed to take pictures and interview the military or DA civilian representative. As the military person in charge at the accident site, the military or DA civilian representative will judge if his other responsibilities will allow him to take the time to meet with the press. Response to queries from the press is the preferred approach, providing information that has been confirmed and is releasable to the public. The military or DA civilian representative must use common sense in working with the media and should make use of public affairs personnel to provide guidance.

*c.* Commanders will expeditiously provide copies of all press released to the Chief of Public Affairs, HQDA, DSN: 227-4200 of commercial: (202) 697-4200.

#### **11-7. Accident site clean up**

The goal of accident site clean up is to return the site to normal as soon as possible, with minimal inconvenience or hazard.



a. The officer in charge will assist local civilian officials in arranging clean up of the accident as quickly as possible, consistent with safety and security requirements.

b. After EOD personnel have certified the munitions or explosives safe for movement, cleanup should be accomplished using the assistance of the carrier, the installation designated to provide on-scene support, and/or locally available commercial equipment.

c. Clean up of munitions and explosives will be done only by qualified personnel and under controlled conditions to prevent pilfering.

d. Munitions or explosives will be shipped to their original destination or to a designated support installation pending final disposition decision.

e. Technical assistance and aid necessary for movement, salvage, demolition, neutralization, or other disposition of Army shipments being transported by commercial carriers will be in accordance with AR 75-15.

f. The EOD officer at the accident scene has the responsibility for determining whether a dangerous or explosive article is safe for movement.

(1) Upon determination that all munitions or explosives are safe and do not present a hazard, the EOD officer will notify the military representative.

(2) The military representative may then request disposition instructions from the designated support installation.

g. The military representative will ensure that the carrier, consignor, consignee, the response organization, and the commander in whose area the accident/incident occurred are advised of the disposition of the cargo.

### **11-8. Accident investigation**

The Surface Deployment and Distribution Command (SDDC) will ensure that accidents involving munitions and explosives shipment by commercial carriers are investigated and that suitable corrective or preventive measures are established to avoid recurrence.

a. Investigations for accident prevention purposes are encouraged. The Army will support, but not duplicate, investigations conducted by the National Transportation Safety Board (NTSB). The Office of the Secretary of Defense (OSD) will task the Army to assist the NTSB in conducting investigations as appropriate.

b. Upon completion, reports of investigations will be forwarded within 60 days, through the Assistant Secretary of the Army for Installations, Logistics and Environment (ASA(I&E)) to the OSD SOH Policy Directorate with an additional copy to the DOD Explosives Safety Board (DDESB).

### **11-9. Munitions/explosives accident reporting**

a. Accident/Incident Involving Commercial Shipment of Explosives and Dangerous Materials will be reported to the addresses identified in paragraph 11-3 of this pamphlet. The Report Control Symbol (RCS) is CSGLD-1442.

b. An initial report will be forwarded to the addressees in paragraph 11-2. This report will include all information available at the time of submission. Notification will not be delayed due to the lack of detailed information. The goal is to provide as much as is known about the accident/incident at this point to the chain of command. The report will include all information available at the time of submission. The report outline set forth below will be followed:

(1) *Section A.* Report of accident or incident.

(a) Name, organization, location, and telephone number of person reporting the accident.

(b) Date and time of the accident.

(c) Exact location of the accident.

(d) Quantity and complete nomenclature of material involved.

(e) Description of property damage and personnel casualties.

(f) Name of carrier involved and whether the carrier requested military assistance.

(g) Description of the accident, including type of accident (for example, vehicle upset, vehicle collision, train derailment); any indications of sabotage or terrorist activity); condition of cargo (whether there was an explosion or fire, whether it is safe to be moved and/or continued to destination); and estimated property damage.

(h) Whether technical assistance has been provided and if it has the agency, civilian or military providing the assistance.

(i) Origin, destination, and priority of shipment, if known.

(j) Whether the consignor and consignee have been advised.

(k) Other pertinent information (that is, security requirement, press releases, potential danger to local inhabitants, potential environmental impact).

(l) When the initial report does not contain all of the above information, the commander of the activity furnishing technical assistance to the carrier will complete the information listed above and forward it by electronic means to the addresses in paragraph 11-2, after emergency action at the accident scene has been completed.

(2) *Section B.* Technical report of accident. This section is required only in those cases involving loss of life, serious injury, or loss or damage to DOD cargo that renders it unserviceable or unsafe for movement to its original destination. The report will include—

- (a) The information prescribed in paragraph 11–8, above.
  - (b) All known events or conditions that led up to the accident/incident, anything that may have contributed to it, and failure of persons or equipment if known.
  - (c) Detailed description of the kinds and quantities of explosives; lot numbers; time intervals between explosions, if measurable.
  - (d) Description of barricades, if any, and effect upon explosives involved.
  - (e) Photographs if available.
  - (f) A drawing, map, or map overlay, when feasible showing the radii of destruction; damage beyond economical repair; repairable damage; glass breakage; location(s) of injured and deceased; type(s) and weight of missiles and fragments, and distance to which most were projected; distances between locations of explosions occurring at more than one place; and identification of transportation equipment involved.
  - (g) Any indication that a portion of the cargo is missing or otherwise unaccounted for.
- (3) *Submission.* Copies of the report will be submitted within 60 days following the accident to SDDC, with applicable information addressees listed in paragraph 11–2.

### **11–10. Training**

Officers that have been identified as potential official representatives to munitions or explosives accident sites will be provided with this section of DA Pam 385–10 and with local SOPs that provide additional guidance on duties and responsibilities.

## **Chapter 12 Operations Safety Around Water**

### **12–1. Introduction**

The principles of CRM will be applied to marine activities to promote safety during operations in and around water, as required by AR 385–10, chapter 23. Safety in and around water is a challenge during military and training operations; the following rules apply to water operations/activities conducted for these purposes. Safety requirements for U.S. Army Corps of Engineers (USACE) civil work marine activities are found in the USACE Safety and Health Requirements Manual, EM 385–1–1. The principles of CRM will be applied to marine operations to promote safety during operations in and around water, as required by AR 385–10, chapter 22.

### **12–2. Water safety procedures**

a. As part of the CRM concept, hazards present during water operations will be identified and categorized. These hazards should recognize more than the obvious risk of drowning, but must take into consideration potential hazards such as—

- (1) Carbon monoxide threat from motor vehicle operations.
- (2) Hypothermia from wet clothing that may come from wind/splashes from equipment, and so on.
- (3) Threat injury from the impact of equipment and tools.
- (4) Electrical shock.
- (5) Other hazards.

b. Accident prevention approaches will be used to develop safety procedures that address all critical risk categories and the potential for accidents associated with each. The goal will be to eliminate or at least mitigate the possibility of serious accidents. SOPs developed for water operations will incorporate safety rules and procedures that address high-risk areas.

c. SOPs will require that watercraft be tested for leaks prior to the first use of each work period. They will also require that no one be allowed to work alone. There will always be at least two people who will maintain contact with each other during water operations. When the task requires more than two people, a buddy system will be established to ensure that no one works in “isolation.”

### **12–3. Water safety equipment**

a. Safety equipment that eliminates or mitigates identified safety hazards will be provided to personnel working in and around water. As a minimum, all personnel working in and around water will be provided the type of personal flotation devices (PFDs) that conform to military or U.S. Coast Guard standards for the hazards anticipated. Personnel will be required to wear the PFDs when near, on, or in the water.

b. Additional safety equipment appropriate to the work will be provided and required to be used by personnel working in a marine environment. Safety equipment may include a tethered harness when working at heights where fall hazards may result in injury or death. Other equipment may include hard hats, gloves and typical personnel protective

equipment. The site supervisor and/or ranking military person will ensure that safety equipment is worn and used in accordance with approved procedures and techniques.

c. Other safety equipment that is general in nature, that is, not personal, will be used to the maximum extent possible. The need for this type of equipment will be identified during the risk assessment phase. Typical examples of this equipment include safety rails/fences to prevent falling into the water, bilge pumps that may be required to prevent some vessels from holding excess amounts of water, ring buoys and pikes to use with people who fall into the water, and similar types of equipment.

d. All safety equipment and, to the extent possible, operational equipment used for marine operations will be developed and procured to meet U.S. Coast Guard standards for safety.

#### **12-4. Marine operations pre-event planning**

a. The principles and techniques of pre-event emergency planning will be applied and documented prior to the commencement of marine operations. Pre-event planning will focus on what to do should an accident occur. Critical elements of pre-event planning are—

- (1) Identify the person in charge of the site should an accident occur.
- (2) Have procedures and conduct drills for recovery of injured persons, including removal and stabilization while waiting for medical personnel.
- (3) Identify personnel on site with training in CPR and first aid.
- (4) Identify procedures and numbers, or radio frequencies to summon assistance, including ambulance and medical aid.
- (5) Identify process that will be followed to obtain information of how an accident occurred.
- (6) Identify security to be established to secure a site for an accident investigation board.

b. The pre-event plan will address other elements as required by the commander and prevailing laws and regulations.

## **Chapter 13 Facility Closure**

### **13-1. General**

a. Military facilities that are being closed are usually located in or close to a more densely populated areas where the community has become accustomed to the presence of the facility and military personnel. A complicating factor to the closing of a facility is the potential for hazardous materials in and around the site. This chapter provides additional guidance in support of AR 385-10, chapter 24.

b. The process of closing a facility requires that the facility hazardous substances, hazardous waste, hazardous materials, and contaminated media be disposed of or remediated as required prior to closing of a facility and its transfer to civilian use or ownership by another Federal agency (see AR 200-1).

(1) A program for remediating a facility, if required, will be conducted prior to closing and transfer unless the transfer documents outline an alternate approach.

(2) The decommissioning plan will be approved by Headquarters, DA. Note: For the purposes of this pamphlet, the term facility includes land as well as buildings and other structures.

### **13-2. Legal and regulatory responsibilities**

a. The Defense Authorization Amendments and Base Closure and Realignment Act (1988) and The Defense Base Closure and Realignment Act of 1990 require that the DOD and the DA (for Army installations) perform remediation, if required, of the bases prior to transfer to other Government agencies or private entities, unless it is agreed the remediation may take place after transfer. The remediation of these bases may range from the disposal, removal, and remediation of—

- (1) Trash.
- (2) Clearing ranges.
- (3) Other facilities of unused explosives and munitions.
- (4) Radiological sources.
- (5) Hazardous chemicals.
- (6) Biological warfare material.
- (7) Hazardous substances, waste, and material.
- (8) Chemical and biological contamination.

b. The disposal, removal, or remediation of these hazardous substances, wastes, constituents, or materials requires that the process be approached thoughtfully and with a well-developed operational and safety plan. The goal is to

transition facilities that the Army does not need quickly, cost-effectively, efficiently, and safely in support of approved uses of the facility.

### **13-3. Hazardous waste**

*a.* Hazardous constituents may consist of several different forms; from household wastes that may contain hazardous waste to industrial wastes and excess warfighting material. Under the procedures established for facility closing, the Army has the responsibility to ensure that all known hazardous materials are disposed of, removed or, if required, remediated prior to turning a facility over to civilian authorities or other Federal agency authorities.

*b.* A decommissioning plan will be developed for the facility that provides a comprehensive plan for addressing as required hazardous wastes.

*c.* When necessary, the USACHPPM may be called upon to assist in determining the magnitude of hazardous waste and the appropriate means for addressing, if required, the hazards.

*d.* The first step in hazardous waste disposal, removal, and, if required, remediation efforts are to prepare an inventory of all hazardous waste and its location within the facility being closed. This inventory will identify—

- (1) The hazardous waste.
- (2) A brief summary of the risk posed by the waste.
- (3) The amount of the waste present at the site.
- (4) The location of the hazardous waste (location will be presented in the most logical form, that is, map coordinates and/or physical description which define the boundaries that encompass the hazardous waste).
- (5) Hazardous chemical waste that is not classified as war related material will be classified as industrial waste and handled in accordance with standard industrial practice.
- (6) Chemical material produced to support military operations will be handled in accordance with the procedures that have been established for disposing of chemical weapons grade material.

*e.* Once the hazardous waste has been inventoried, the method(s) for disposing, removing or, when required, remediating the hazardous waste will be determined. The description of how to dispose, remove or, when required, remediate the hazardous waste will include such factors as—

- (1) Estimated cost.
- (2) Amount of time required for disposing, removing, or, when required, remediating the hazardous waste.
- (3) If hazardous waste is to be disposed of, the site where it will be taken will be identified confirming that the disposal site is properly licensed to accept the hazardous waste.
- (4) Listing of all permits that are required to extract, transport, and dispose of the hazardous waste. Disposing of hazardous material will consist of provisions for secure long-term storage and/or disposal in accordance with DOD policy and applicable legal requirements.

*f.* The results of the inventory and study process will be used to identify all hazardous waste and to develop the method(s) for disposing, removing, or, when required, remediating each hazard. The plan will address the cost for disposing, removing, or, if necessary, remediating the hazardous waste; the processes that will be used to address the hazardous waste; and the risk associated with each process if such action is required (risk will address potential for inadvertent release of the waste, any unacceptable risks that may be posed to human health, and/or the environment as a result of that release).

*g.* The facility's commander will ensure that all appropriate action is taken to ensure that legal, regulatory, and other requirements, if applicable, are followed in developing the hazardous waste disposal, removal, or remediation plan as part of the overall remediating plan.

*h.* During decommissioning operations, records will be kept that identify—

- (1) All hazardous waste.
- (2) Any unexpected events or situations (for example, storage containers not in proper position).
- (3) Amount (weight/volume).
- (4) Disposition results (location of final storage location or method of treating the hazardous waste)

*i.* It is critical that these records be detailed to a level sufficient to provide an audit trail of what was found, what was disposed of, any problems that developed, and final disposition actions. The record of hazardous wastes disposed of, removed, or remediated will be checked against the initial inventory of hazardous wastes. Provision will be made in the database for all actions to be verified with the signature of the appropriate official, as each segment of hazardous waste is disposed of/removed/remediated.

### **13-4. Unexploded ordnance**

*a.* Unexploded ordnance (UXO) on military facilities that are being closed presents a number of problems. First is the sheer magnitude of the problem. Ranges, bunkers, and other possible locations for unexploded ordnance mean that the area of possible UXO contamination is extensive. Further complicating the issue is the large variety of ordnance that may be present. On some installations, ordnance may range from small arms to rifle to artillery to rocket/missile rounds. Ordnance that has been exposed to the elements may be particularly sensitive and therefore even more

dangerous if disturbed. Older ordnance may be difficult to identify and disarm or destroy. Remediation of unexploded ordnance requires an orderly and cautious approach.

*b.* Phase 1 is to develop the approach or strategy for the remediation of a closed or closing facility. Because remediation of Army installations with UXO is a complicated process a decommissioning plan is required that will be coordinated with and approved by the DDESB. The document for this coordination will be the site plan. In addition to the site plan is a requirement for a decommissioning program plan that contains a section identifying the destruction of ordnance and explosives that will be reviewed by the U.S. Army Technical Center for Explosives Safety (USATCES).

*c.* Phase 2 is to determine the types of UXO present, how much, and the location.

*d.* The start of this investigation is to search historical records to identify what type of ordnance has been used in training, testing, and stored at the facility. Historical records must be viewed cautiously and used only as general guidance unless verified by independent sources. Safety is the main concern and all data must be verified using appropriate analytical tools and methodology.

*e.* Ranges, test sites, and storage areas must be located.

(1) A site map should be prepared of each potential site. This map will display the exact layout, shape, and size of the range as well as the safety margin required for possible overshoots of the type of ordnance that was used on that range or test site. If multiple types of ordnance were used on the range then the map should address each type or ordnance and its last known location.

(2) A site survey will be conducted to validate and update all locations. The site survey may require the use of such technologies as magnetometry, ground penetrating radar, electromagnetic induction, infrared sensors, or a combination of these sensors. Other technologies are being developed and may come on line once they have been fully developed and validated. The type of technology(s) used for a site survey depends on the terrain, intended use, type(s) of ordnance that was used on the site, and the depth to which remediation will be conducted.

(3) Composite risk analysis will be conducted for the entire process that will evaluate each site of UXO. The risk analysis will include an assessment of the methods (reclamation, open burning/detonation, incineration, removal and recovery, excavation (using manual/mechanized systems/remote-controlled systems, and so on) being considered to remediate the site(s) and the hazards associated with each method, including transportation.

(4) Safety training will be conducted first to educate personnel on the importance of not approaching or touching UXO and reporting any sightings. Personnel charged with remediation will have safety training on a regular basis that incorporates information on the type of UXO and the known hazards of removing (or destroying) the UXO.

*f.* As remediation of UXO contaminated sites occurs, a detailed record keeping process will be used to record actions that take place. The data records will include information on each unit of UXO, where it was located, general description, serial and national stock numbers (NSNs) when possible, and final disposition of the munitions. Any difficulties that occur during remediation will be noted along with the actions taken to resolve the issue.

### **13-5. Radiation sources**

Some Army sites may have radiological contamination. Facilities to close or to be used for unrestricted use will be decommissioned in accordance with the Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM), Army policy, NRC, state and local regulations, radioactive commodity/item decommissioning plans, and NRC licenses. The owners/users of the sites will conduct required radiation surveys or have the radiation surveys conducted to assess whether sites have radiological contamination. If the sites indicate radiological contamination, then the results will be incorporated into decommissioning plans. The information to be entered will be the radiation source(s), amount of source(s), where the radiological contamination is, and the action proposed for mitigation with dates of action. The decontamination and decommissioning will be tracked until resolved. For additional information and references on radiological decommissioning, refer to DA Pam 385-24.

### **13-6. Other warfighting materials**

*a.* Many military installations may have other material that was developed for warfighting purposes. During the research and survey conducted for the decommissioning plan, other potential warfighting materials will be noted. Materials that fall into the other warfighting material category include—

- (1) Vehicles (especially damaged and/or inoperable vehicles).
- (2) Chemical and biological material storage and related areas.
- (3) POL sites (storage, distribution, and so on).

*b.* Items that fall into this category will be included in the decommissioning plans and in the base remediation plan. In the instances where the material/equipment consists of vehicles and/or weapons (but not munitions or explosives) the item will be rendered inoperable and plans made for disposal in accordance with current regulations on disposing of excess or non-operating equipment.

## Chapter 14 Workplace Safety Programs

### 14-1. Introduction

*a.* This chapter prescribes guidelines and procedures for implementing major work place safety programs to protect Army military and civilian personnel working in nonmilitary unique operations. These guidelines should also be integrated in military unique operations to minimize risk as commanders conduct CRM.

*b.* Workplace safety programs should be modified to fit local operations as determined by commanders and SOH staff to provide maximum safety and reduction of the risk of accidental loss.

### 14-2. Hazard Communication Program

*a.* Hazardous Communication (HAZCOM) Program is established to ensure that hazardous information on all hazardous chemicals in the workplace is transmitted to affected employers and exposed employees. Policies and procedures of this program are established in accordance with 29 CFR section 1910.1200 and AR 700-141.

*b.* Commanders and directors, safety, environmental, health, logistics, training, operations, personnel offices, and supervisory personnel at all levels who share responsibility for implementation Army HAZCOM Program should—

- (1) Provide chemical specific training to trainers.
- (2) Maintain the health hazard inventory.
- (3) Maintain a central master file of MSDSs.
- (4) Provide copies of MSDSs as needed.
- (5) Interpret MSDS data as needed.
- (6) Determine employees to be trained through field surveys.

*c.* Commanders and directors will—

(1) Ensure a written comprehensive HAZCOM Program is developed, implemented, and maintained at each level of activity.

(2) Ensure all employees who use or are exposed to hazardous chemicals receive DOD HAZCOM training.

(3) Ensure all employees who use or are exposed to hazardous chemicals are trained on specific hazards of each chemical.

(4) Ensure supervisors maintain MSDS for each hazardous chemical that is used or stored.

(5) Ensure MSDSs are obtained from vendor for directly purchased items.

(6) Ensure hazardous material inventory is maintained and updated monthly in each work section.

(7) Ensure a copy of updated hazardous material inventory is forwarded to local Safety Office and Preventive Medicine.

(8) Ensure hazardous material containers are labeled in compliance with 29 CFR 1910-1200(f).

(9) Ensure employees have access to MSDSs.

*d.* Supervisors will—

(1) Develop, implement, and maintain a written comprehensive hazardous communication program.

(2) Ensure all employees who use and are exposed to hazardous chemicals receive DOD HAZCOM training.

(3) Ensure all employees who use and are exposed to hazardous chemicals are trained on specific hazards of each chemical.

(4) Maintain MSDS for each hazardous chemical.

(5) Obtain MSDS from vendor for directly purchased hazardous chemicals.

(6) Maintain and update hazardous material inventory.

(7) Label, tag, and mark hazardous material containers in compliance with 29 CFR 1910.1200(f).

(8) Ensure employees have access to MSDSs.

### 14-3. Lockout/tagout

*a. Purpose.* The purpose of this program is to establish minimum requirements for the lockout or tagout of energy isolating devices. It will be used to ensure that the machine or equipment is isolated from all potentially hazardous energy, and locked or tagged out before employees perform any servicing or maintenance activities where the unexpected energization, start up, or release of stored energy could cause injury. This program establishes minimum performance requirements for the control of such hazardous energy.

*b. Procedures.*

(1) Appoint principle staff adviser and technical consultant to conduct periodic inspections to ensure each activity is in compliance with this regulation and other Army and Federal policies governing lockout/tagout of machines or equipment.

(2) Ensure lockout/tagout safety plans are developed, established, and implemented in each workplace as required, ensuring that consultation and bargaining obligations with the local union are met prior to implementation.

- (3) Ensure authorized personnel responsible for performing lockout/tagout procedures are identified in activity safety plans (supervisors, line supervisors, operators, maintenance personnel).
- (4) Ensure all machinery and equipment is listed in each section lockout/tagout safety plan.
- (5) Establish lockout/tagout safety plan isolating equipment and machinery at the energy source.
- (6) Train affected employees in the purpose and use of the lockout/tagout procedures.
- (7) Train authorized employees in performing lockout/tagout procedures.
- (8) Ensure authorized employees perform lockout/tagout procedures as required.
- (9) List all machinery and equipment in the lockout/tagout safety plan.
- (10) Obtain required lockout/tagout devices needed to isolate equipment and machinery in the workplace.
- (11) Assign required lockout/tagout devices to authorized personnel.

*c. Requirements.* Appropriate lockout or tagout devices will be affixed to energy isolating devices, and to otherwise disable machines energization, start up, or release of stored energy in order to prevent injury to employees.

(1) Directors, commanders, and supervisors responsible for machinery and equipment will establish a lockout/tagout safety plan. Procedures will be developed for each type of equipment.

(2) Appropriated employees will be instructed in the safety significance of the lockout/tagout procedure. Each new or transferred affected employee and other employees whose work operations are (or maybe) in the area will be instructed in the purpose and use of the lockout or tagout procedure of affected employees (operators of equipment).

(3) Authorized (line supervisors, maintenance personnel) personnel will be trained on the lockout/tagout procedures to isolate energy from the machinery and equipment.

(4) Equipment and machinery will be locked/tagged out while in unoperational condition.

(5) Inventory of equipment that requires lockout/tagout procedures will be included in lockout/tagout safety plan.

(6) Make a survey to locate and identify all isolating devices to be certain which switches, valves, or other energy isolating devices apply to the equipment to be locked or tagged out. More than one energy source (electrical, mechanical, or others) may be involved.

*d. Sequence of lockout or tagout system.*

(1) Notify all affected employees that a lockout or tagout system is going to be utilized and the reason thereof. The authorized employee will know the type and magnitude of energy that the machine or equipment utilizes and will understand the hazards thereof.

(2) If the machine or equipment is operating, shut it down by normal stopping procedures (depress stop button, open toggle switch, and so on).

(3) Operate the switch, valve, or other energy isolating devices so that the equipment is isolated from its energy source. Stored energy (such as that in springs, elevated machine members, rotating flywheels, hydraulic systems, and air, gas, steam or water pressure, and so on) must be dissipated or restrained by methods such as repositioning, blocking, bleeding down, and so on.

(4) Lockout and or tagout the energy isolating devices with assigned individual locks or tags.

(5) After ensuring that no personnel are exposed, and as a check on having disconnected the energy sources, operate the push button or other normal operating controls to make certain the equipment will not operate. Caution: Return operating controls to "neutral" or "off" after the test.

(6) The equipment is now locked or tagged out.

*e. Restoring machines or equipment to normal production operations.*

(1) After the servicing and/or maintenance is complete, and equipment is ready for normal production operations, check the area around the machines or equipment to ensure that no one is exposed.

(2) After all tools have been removed from the machine or equipment, guards have been reinstalled and employees are in the clear, remove all lockout or tagout devices. Operate the energy isolating devices to restore energy to the machine or equipment.

*f. Procedures involving more than one person.* In the preceding steps, if more than one individual is required to lockout or tagout equipment, each will place their own personal lockout device or tagout device on the energy isolating device. When an energy isolating device cannot accept multiple locks or tags, a multiple lockout or tagout device (hasp) may be used. If lockout is used, a single lock may be used to lockout the machine or equipment with the key being placed in a lockout box or cabinet which allows the use of multiple locks to secure it. Each employee will then use their own lock to secure the box or cabinet which allows the use of multiple locks to secure it. As each person no longer needs to maintain their lockout protection, that person will remove their lock from the box or cabinet.

*g. Basic rules for using lockout or tagout system procedure.* All equipment will be locked out or tagged out to protect against accidental or inadvertent operation when such operation could cause injury to personnel. Do not attempt to operate any switch, valve, or other energy isolating device where it is locked or tagged out.

#### **14-4. Confined spaces**

In order to prevent injury and possible death, Army personnel will not enter a permit-required confined space without any approved permit, personal protective clothing, monitoring equipment, or use of isolation/lockout/tagout procedures.

*a.* A confined space is a space that is large enough and configured for an individual to enter and perform work, has limited or restricted means to enter and perform work, has limited or restricted means for entry or exit, and is not designed for continuous employee occupancy.

*b.* A permit-required confined space is a confined space that has any one of the following characteristics:

- (1) Contains or has the potential to contain, a hazardous atmosphere.
- (2) Contains a material which has a potential for engulfing an entrant.
- (3) Is internally configured such that an entrant could be trapped or asphyxiated.
- (4) Contains any other recognized serious safety or health hazard.

*c.* Confined spaces are, but are not limited to, boilers, cupola, degreasers, furnaces, pipelines, pits, pumping stations, septic tanks, sewage digesters, sewers, manholes, silos, storage tanks, utility, vaults, vats, tunnels, cells, ducts, or similar type enclosures.

*d.* Procedures for working in confined spaces include—

(1) Installation safety offices in conjunction with preventive medicine will inventory all confined space possibilities to identify all permit-required confined spaces, develop a confined space training program, and evaluate confined space work sites to ensure proper protective equipment is used where mechanical ventilation sufficient to maintain non-hazardous atmosphere is not provided. This evaluation should include—

- (*a*) Respiratory equipment.
- (*b*) Protective clothing.
- (*c*) Safety line.
- (*d*) Body harness.
- (*e*) Communication equipment.
- (*f*) Air monitoring equipment.
- (*g*) Air testing equipment.

(2) Confined space firefighter rescue team will—

(*a*) Appoint a confined space firefighter rescue team.  
(*b*) Ensure personnel assigned to the confined space rescue team are provided with and trained to properly use the personal protective equipment, including respirators and rescue equipment necessary for making rescues from the installation's permit spaces.

(*c*) Ensure the rescue team is trained to perform the assigned rescue functions and has received the training required for authorized entrants.

(*d*) Ensure rescue teams practice making permit space rescues at least once every 12 months, by means of simulated rescue operations in which they remove dummies, mannequins, or personnel through representative openings and portals whose size, configuration, and accessibility closely approximate those of the permit spaces from which rescues may be required.

(3) Personnel working in confined space will observe the following guidelines:

(*a*) Do not enter a confined space without proper protective equipment where known explosive or oxygen deficient atmosphere exists.

(*b*) Establish confined space entry procedures.

(*c*) Develop warning signs and post at confined space areas needing a permit in accordance with 29 CFR 1910.

(4) Emergency procedures and training are provided for personnel assigned to a confined space entry job.

(5) Confined spaces are evaluated and analyzed by local preventive medicine before entry is permitted.

(6) Confined space entry permit are developed locally to be posted by each confined space that poses a hazardous condition so that all personnel can read it.

(7) Supervisors of employees working in confined spaces will—

(*a*) Ensure the confined space is identified and evaluated by the installation Safety Office and Preventive Medicine Service.

(*b*) Initiate and post confined space entry permit at each confined space that poses a hazardous condition where all personnel can read it.

(*c*) Know the hazards that may exist during entry, including information on the mode, signs or symptoms, and consequences of the exposure.

(*d*) Verify, by checking that the appropriate entries have been made on the permit, that all tests specified by the permit have been conducted and that all procedures and equipment specified by the permit are in place before endorsing the permit and allowing entry to begin.

(*e*) Terminate the entry and cancel the permit upon completion of job.

(*f*) Verify that rescue services are available and that the means for summoning them are operable.

(*g*) Remove unauthorized individuals who enter or who attempt to enter the permit space during entry operations.

(*h*) Determine, whenever responsibility for a permit space entry operation is transferred and at intervals dictated by



the hazards and operations performed within the space, which entry operations remain consistent with terms of the entry permit and that acceptable entry conditions are maintained.

(i) Ensure safety precautions (proper respiratory equipment, protective equipment, safety line, safety harness) are taken in accordance with the preventive medicine service and installation safety office's evaluation.

(j) Establish confined space entry procedures and train employees on procedures.

(k) Provide emergency procedures and training for personnel assigned to a confined space entry job.

(l) Ensure confined space is monitored continuously in areas where authorized entrants are working to determine if acceptable entry conditions are being maintained during the course of the entry operations.

(8) Authorized entrants will—

(a) Know the hazards that may be faced during entry, recognize the signs and symptoms of exposure to the hazards, and understand the consequences of exposure to a hazard.

(b) Communicate with the attendant as necessary to enable the attendant to monitor entrant status and to enable the attendant to alert entrants of the need to evacuate the space.

(c) Properly use the following equipment:

1. Testing and monitoring equipment.

2. Ventilating equipment needed to obtain acceptable entry conditions.

3. Communications equipment.

4. Personal protective equipment (insofar as feasible engineering and work practice controls do not adequately protect employees).

5. Lighting equipment needed to enable employees to see well enough to work safely and to exit the space quickly in an emergency.

6. Barriers and shields as required.

7. Equipment, such as ladders, needed for safe ingress and egress by authorized entrants.

(d) Exit the permit space, unless it is physically impossible to do so, when either the attendant orders evacuation, the automatic alarm is activated, or the entrants perceive that they are in danger.

(9) Attendants will—

(a) Continuously maintain an accurate count of all persons in the confined space.

(b) Know the hazards that may be faced during entry, including information on the mode, signs, or symptoms, and consequences of the exposure.

(c) Be aware of possible behavioral effects of hazard exposure in authorized entrants.

(d) Remain outside the permit space during entry operations until relieved by another attendant.

(e) Communicate with authorized entrants as necessary to monitor entrant status and to alert entrants of the need to evacuate the space.

(f) Monitor activities inside and outside the space to determine if it is safe for entrants to remain in the space, and order the authorized entrants to evacuate the permit space immediately under any of the following conditions:

1. The attendant detects a prohibited condition.

2. The attendant detects the behavioral effects of hazard exposure in an authorized entrant.

3. The attendant detects a situation outside the space that could endanger the authorized entrants.

4. The attendant cannot effectively and safely perform all the duties.

(g) Summon rescue and other emergency services as soon as the attendant determines that authorized entrants may need assistance to escape from permit space hazards.

(10) Take the following actions when an unauthorized person approaches or enters a permit space while entry is under way:

(a) Warn the unauthorized person(s) that they must stay away from the permit space.

(b) Advise the unauthorized person(s) that they must exit immediately if they have entered the permit space.

(c) Inform the authorized entrant(s) and the entry supervisor if the unauthorized persons have entered the permit space.

(d) Perform non-entry rescues as specified by the activity's rescue procedure.

(e) Perform no duties that might interfere with the attendant's primary duty to monitor and protect the authorized entrant(s).

d. All individuals working with confined spaces will—

(1) Use protective equipment, respirators, safety line, and safety harness as required.

(2) Read posted confined space permits before entry into confined space.

(3) Not enter any permit-required confined space that does not have a confined space permit posted.

e. The following requirements will be followed in accordance with Part 1910.146, Title 29, Code of Federal Regulations (29 CFR 1910.146):

(1) An entry supervisor will verify that appropriate entries have been made before entry into a permit-required confined space.

- (2) Permits will be completed and posted at entry of confined space.
- f.* Personnel who are required to work in a permit-required confined space or in support of those working in a permit required confined space will have additional training in the following areas:
- (1) Emergency entry and exit procedures.
  - (2) Use of respirators, as required.
  - (3) Current certification in basic first aid and cardiopulmonary resuscitation (CPR) skills for personnel performing rescue service.
  - (4) Lockout procedures are specific to the confined space in which they operate
  - (5) Safety equipment use.
  - (6) Rescue and training drills designed to maintain proficiency will be given initially to new employees, and thereafter at least annually or at lesser intervals as determined necessary by the supervisor.
  - (7) Permit system — what the permit says and what it means.
  - (8) Recommended work practices.
- g.* Training will be provided to each affected employee—
- (1) Before the employee is first assigned duties under this regulation.
  - (2) Before there is a change in assigned duties.
  - (3) Whenever there is a change in permit space operations that present a hazard for which an employee has not previously been trained.
  - (4) Whenever the employer has reason to believe that there are either deviations from the permit space entry procedures or that there are inadequacies in the employee's knowledge or use of these procedures.
- h.* Testing and monitoring will be performed in the following manner:
- (1) The tests performed will be conducted in the following order; oxygen content, flammability, and toxic materials. These tests will include upper explosion limit (UEL) and lower explosion limit (LEL) readings.
  - (2) Entry into a confined space for any type of hot work will be prohibited when tests indicate the concentration of flammable gases in the atmosphere is greater than 10 percent of the lower flammability limit (LFL).
  - (3) Equipment for continuous monitoring of gases and vapors will be explosion-proof and equipped with an audible alarm or danger signaling device that will alert employees when a hazardous condition develops.
  - (4) The percentage of oxygen for entry into a confined space will be no less than 19.5 percent nor greater than 23.5 percent at 760 mmHG.
- i.* Labeling and posting will be done in the following manner:
- (1) All warning signs will be printed in both English and in the predominant language of the workers who do not read English.
  - (2) All entrances to any confined space will be posted; signs will include but not necessarily be limited to the following information: DANGER CONFINED SPACE ENTRY BY PERMIT ONLY.
  - (3) When a specific work practice is performed or specific safety equipment is necessary, an applicable statement will be added (for example, RESPIRATOR REQUIRED FOR ENTRY, LIFELINE REQUIRED FOR ENTRY, HOT WORK PERMITTED).
  - (4) Emergency procedures, including phone numbers of fire department and emergency medical services, will be posted conspicuously within the immediate area of the confined space, or by telephone from which help would be summoned.
- j.* Safety equipment and clothing should take in consideration the following, in accordance with the appropriate required regulations:
- (1) Eye and face protection.
  - (2) Head protection.
  - (3) Foot protection.
  - (4) Body protection—gloves, aprons, and over-suits.
  - (5) Hearing protection.
  - (6) Respiratory protection—the use of respiratory protection will be determined by the supervisor.
  - (7) Hand protection.
  - (8) A safety belt with "D" rings for attaching a life line will be worn at all times.
- k.* The combination of a body harness with life line will be used when—
- (1) An employee is required to enter to complete the gas analysis.
  - (2) An employee is working in an area where entry for the purpose of rescue would be contradicted.
  - (3) Any failure to ventilation would allow the build-up of toxic or explosive gases within the time necessary to evacuate the area.
  - (4) The atmosphere is immediately dangerous to life and health.
- l.* If the exit opening is less than 18 inches (45 centimeters) in diameter, a wrist type harness will be used.
- m.* Work practices are as follows:

- (1) *Purging and ventilating include—*
  - (a) Blower controls will be a safe distance from the confined area, and audible alarm will be installed in all equipment to signal when there is a ventilation failure.
  - (b) Air flow measurements will be made before each work shift to ensure adequate ventilation is being maintained. Where continuous ventilation is not part of the operating procedure, the atmosphere will be tested until continuous acceptable levels of oxygen and contaminants are maintained for three tests at 5 minute intervals.
  - (c) Local exhaust will be provided when general ventilation is inadequate due to the restrictions in the confined space or when high concentrations of contaminants occur in the breathing zone of the worker.
- (2) *Isolation/lockout/tagging include—*
  - (a) The isolation procedures will be specific for each type of confined space.
  - (b) Confined spaces will be completely isolated from all other systems by physical disconnection, double block, and/or blanking off all lines.
  - (c) Where complete isolation is not possible (sewers and utility tunnels), specific written safety procedures approved and enforced by the supervisor will be used.
  - (d) Shut-off valves serving the confined space will be locked in the closed position and tagged for identification.
  - (e) Electrical isolation of the confined space will be accomplished by locking circuit breakers and or disconnects in the open (off) position with a key-type padlock.
  - (f) Mechanical isolation can be achieved by disconnecting linkages or removing drive belts or chains.
- (3) *Medical.* Workers who enter a confined space will be provided physical examination by their own physicians at no expense to the employees. The physical examination will—
  - (a) Include a demonstration of the workers' ability to use negative and positive pressure respirators.
  - (b) Include a demonstration of the workers' ability to see and hear warnings (flashing lights, buzzers, or sirens).
  - (c) Place emphasis on several evaluations of the employees' ability to carry out their assigned duties and the detection of anything that may preclude confined space work.
- n. Entry and rescue procedures are as follows:
  - (1) *Entry procedures include—*
    - (a) The internal atmosphere will be tested prior to an employee entering the space.
    - (b) Testing will be conducted with a calibrated direct-reading instrument.
    - (c) Confined space entry permit will be completed.
    - (d) Adequate ventilation or protective equipment will be implemented to ensure atmosphere is free of hazard to entrants.
  - (2) *Rescue procedures, specifically designed for each entry, include—*
    - (a) A trained person with a fully charged, positive pressure, self-contained breathing apparatus (SCBA) will be on standby during a confined space entry.
    - (b) The standby person will maintain unprotected life lines and communications to all workers in the confined space.
    - (c) Under no circumstances will the standby person enter the confined space until the first person is relieved and is assured that adequate assistance is present.
    - (d) Before workers enter the confined spaces, the fire department will be notified.
  - (3) *First aid provisions include—*
    - (a) There must be someone readily available in the area of the confined space who is currently trained in CPR and basic first aid procedures.
    - (b) Before workers enter the confined spaces, the fire department must be notified.

#### **14-5. Fall protection**

- a. *Purpose.* To prescribe policies, procedures, and responsibilities for protecting personnel working in operations that involve the risk of an accidental fall of four feet or more.
- b. *Roles.*
  - (1) *Directors and or commanders.*
    - (a) Will develop and implement a fall protection plan for all operations that require fall protection.
    - (b) Will ensure supervisors are trained in fall protection procedures and requirements.
    - (c) Will ensure supervisors train personnel in fall protection procedures and requirements.
    - (d) Will provide adequate fall protection in accordance with this regulation and Army and Federal safety standards.
  - (2) *Supervisors.*
    - (a) Will train personnel on proper fall protection procedures and requirements in accordance with the activity fall protection plan.
    - (b) Will ensure adequate fall protection is provided in accordance with this regulation, Army, and Federal safety standards.

(c) Will evaluate areas of responsibilities and ensure personnel comply with proper fall protection procedures and requirements as required.

(3) *All individuals.* All individuals working in operations which require fall protection will comply with the fall protection procedures and requirements as required.

*c. Procedures.*

(1) All supervisors conducting training are competent in the following areas:

(a) Nature of fall hazards in the work area.

(b) Correct procedures for erecting, maintaining, disassembling, and inspecting the fall protection systems to be used.

(c) Use and operation of guardrail systems, personal fall arrest systems, safety net systems, warning line systems, safety monitoring systems, controlled access zones, and other protection to be used in accordance with Part 1926.502, Title 29, Code of Federal Regulations (29 CFR 1926.502) and Part 1910.23, Title 29, Code of Federal Regulations (29 CFR 1910.23).

(d) The role of each employee in the safety monitoring system when this system is used.

(e) Limitations on the use of mechanical equipment during the performance of roofing work on low-sloped roofs.

(f) The correct procedures for the handling and storage of equipment and materials and the erection of overhead protection.

(g) The role of employees in the activities fall protection plan.

(2) Activity fall protection plan and training includes all areas in paragraph 16-4a of this regulation and 29 CFR 1926.502 as required in each operation.

(3) Risk assessments will be conducted in accordance with chapter 2 of this regulation on all operations prior to start of work.

(4) Risk assessments will be included in fall protection plan and training.

(5) The following fall protection systems are used in compliance with 29 CFR 1926.502 to protect personnel from falls.

(a) If the employer chooses to use guardrail systems to protect workers from falls, the systems must meet the following criteria; top rails and midrails of guardrail systems must be at least 1/4 inch (0.6 centimeters) nominal diameter or thickness to prevent cuts and lacerations; if wire rope is used for top rails, it must be flagged at not more than 6 feet intervals (1.8 meters) with high-visibility material; and steel and plastic banding cannot be used as top rails or midrails.

1. Manila, plastic, or synthetic rope used for top rails or midrails must be inspected as frequently as necessary to ensure strength and stability.

2. The top edge height of top rails, or (equivalent) guardrails must be 42 inches (1.1 meters) plus or minus 3 inches (8 centimeters), above the walking and working level. When workers are using stilts, the top edge height of the top rail, or equivalent member, must be increased an amount equal to the height of the stilts.

3. 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, and/or working surface when there are no walls or parapet walls at least 21 inches (53 centimeters) high. When midrails are used, they must be installed at a height midway between the top edge of the guardrail system and the walking and or working level. When screens and mesh are used, they must extend from the top rail to the walking and or working level and along the entire opening between top rail supports. Intermediate members, such as balusters, when used between posts, will not be more than 19 inches (48 centimeters) apart.

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

(b) The guardrail system must be capable of withstanding a force of at least 200 pounds (890 newtons) applied within 2 inches of the top edge in any outward or downward direction. When the 200-pound (890 newtons) test is applied in a downward direction, the top edge of the guardrail must not deflect to a height less than 39 inches (1 meter) above the walking and or working level.

(c) Mid-rails, screens, mesh, intermediate vertical members, solid panels, and equivalent structural members will be capable of withstanding a force of at least 150 pounds (667 newtons) applied in any downward or outward direction at any point along the mid-rail or other member.

(d) Guardrail systems will be surfaced to protect workers from punctures or lacerations and to prevent clothing from snagging.

(e) The ends of top rails and mid-rails will not overhang terminal posts, except where such overhang does not constitute a projection hazard.

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

(g) At holes, guardrail systems will be set up on all unprotected sides or edges. When holes are used for the passage

of materials, the hole will have not more than two sides with removable guardrails sections. When the hole is not in use, it must be covered or provided with guardrails along all unprotected sides or edges.

(h) If guardrail systems are used around holes that are access points (such as ladderways), gates must be used or the point of access must be offset to prevent accidental walking into the hole.

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

*d. Systems.*

(1) *Personal fall arrest systems.* These consist of an anchorage, connectors, and a body harness and may include a deceleration device, lifeline, or suitable combinations. If a personal fall arrest system is used for fall protection, it must do the following:

(a) Limit maximum arresting force on an employee to 1,800 pounds (8 kilonewtons) when used with a body harness; be rigged so that an employee can neither free fall more than 6 feet (1.8 meters) nor contact any lower level;

(b) Bring an employee to a complete stop and limit maximum deceleration distance an employee travels to 3.5 feet (1.07 meters); and

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

(d) Personal fall arrest systems must be inspected prior to each use for wear damage and other deterioration. Defective components must be removed from service. Dee-rings and snaphooks must have a minimum tensile strength of 5,000 pounds (22.2 kilonewtons). Dee-rings and snaphooks will be proof-tested to a minimum tensile load of 3,600 pounds (16 kilonewtons) without cracking, breaking, or suffering permanent deformation.

(e) Snaphooks will be sized to be compatible with the member to which they will be connected, or will be of a locking configuration.

(f) Unless the snaphook is a locking type and designed for the following connections, they will not be engaged:

1. Directly to webbing, rope, or wire tope.

2. To each other.

3. To a dee-ring to which another snaphook or other connector is attached.

4. To a horizontal lifeline.

5. To any object incompatible in shape or dimension relative to the snaphook, thereby causing the connected object to depress the snaphook keeper and release unintentionally.

(g) OSHA considers a hook to be compatible when the diameter of the dee-ring to which the snap hook is attached is greater than the inside length of the snap hook when measured from the bottom (hinged end) of the snap hook keeper to the inside curve of the top of the snap hook. Thus, no matter how the dee-ring is positioned or moved (rolls) with the snap hook attached, the dee-ring cannot touch the outside of the keeper, thus depressing it open. As of January 1, 1998, the use of non locking snap hooks will be prohibited.

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

(i) Horizontal lifelines will 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. Lifelines will be protected against being cut or abraded.

(j) Self-retracting lifelines and lanyards that automatically limit free fall distance to 2 feet (0.61 meters) or less will be capable of sustaining a minimum tensile load of 3,000 pounds (13.3 kilonewtons) applied to the device with the lifeline or lanyard in the fully extended position.

(k) Self-retracting lifelines and lanyards that do not limit free fall distance to 2 feet (0.61 meters) or less, ripstitch lanyards, and tearing and deforming lanyards will be capable of sustaining a minimum tensile load of 5,000 pounds (22.2 kilonewtons) applied to the device with the lifeline or lanyard in the fully extended position.

(l) Ropes and straps (webbing) used in lanyards, lifelines, and strength components of body belts and body harnesses will be made of synthetic fibers.

(m) Anchorages will 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, (that is, capable of supporting at least twice the weight expected to be imposed upon it). Anchorages used to attach personal fall arrest systems will be independent of any anchorage being used to support or suspend platforms and must be capable of supporting at least 5,000 pounds (22.2 kilonewtons) per person attached.

(n) Lanyards and vertical lifelines must have a minimum breaking strength of 5,000 pounds (22.2 kilonewtons).

(2) *Positioning device systems.* These r body harness systems are to be set up so that workers can free fall no farther than 2 feet (0.6 meters). They will be secured to an anchorage capable of supporting at least twice the potential impact load of an employee's fall or 3,000 pounds (13.3 kilonewtons), whichever is greater. Requirements for snaphooks, dee-rings, and other connectors used with positioning device systems must meet the same criteria as those for personal fall arrest systems.

(3) *Safety monitoring systems.*

(a) When no other alternative fall protection has been implemented, the employer will implement a safety monitoring system. Employers must appoint a competent person to monitor the safety of workers and the employer will ensure that the safety monitor is competent in the recognition of fall hazards; is capable of warning workers of fall hazards dangers and in detecting unsafe work practices; is operating on the same walking and or working surfaces of the workers and can see them; and is close enough to work operations to communicate orally with workers and has no other duties to distract from the monitoring function.

(b) Mechanical equipment will 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.

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

(d) All workers in a controlled access zone will be instructed to promptly comply with fall hazard warnings issued by safety monitors.

(4) *Safety net systems.*

(a) Safety nets must be installed as close as practicable under the walking and or working surface on which employees are working and never more than 30 feet (9.1 meters) below such levels. Defective nets will not be used.

1. Safety nets will be inspected at least once a week for wear, damage, and other deterioration.

2. The maximum size of each safety net mesh opening will not exceed 36 square inches (230 square centimeters) nor be longer than 6 inches (15 centimeters) on any side, and the openings, measured center-to-center, of mesh ropes or webbing, will be secured to prevent enlargement of the mesh opening.

3. Each safety net or section will have a border rope for webbing with a minimum breaking strength of 5,000 pounds (22.2 kilonewtons).

4. Connections between safety net panels will be as strong as integral net components and be spaced no more than 6 inches (15 centimeters) apart.

(b) Safety nets will be installed with sufficient clearance underneath to prevent contact with the surface or structure below.

(c) When nets are used on bridges, the potential fall area from the walking and or working surface to the net will be unobstructed.

(d) Safety nets will be capable of absorbing an impact force of a drop test consisting of a 400-pound (180 kilogram) bag of sand 30 inches (76 centimeters) in diameter dropped from the highest walking and or working surface at which workers are exposed, but not from less than 42 inches (1.1 meters) above that level.

(e) Items that have fallen into safety nets, including (but not restricted to) materials, scrap, equipment, and tools, will be removed as soon as possible and at least before the next work shift.

(5) *Warning line systems.*

(a) Warning line systems consist of ropes, wires, or chains, and supporting stanchions and are set up as follows:

1. Flagged at not more than 6-foot (1.8 meters) intervals with high-visibility material.

2. Rigged and supported so that the lowest point (including sag) is no less than 34 inches (0.9 meters) from the walking and or working surface and its highest point is no more than 39 inches (1 meter) from the walking and or working surface.

3. Stanchions, after being rigged with warning lines, will be capable of resisting, without tipping over, a force of at least 16 pounds (71 newtons) applied horizontally against the stanchion, 30 inches (0.8 meters) above the walking and or working surface, perpendicular to the warning line and in the direction of the floor, roof, or platform edge.

4. The rope, wire, or chain will have a minimum tensile strength of 500 pounds (2.22 kilonewtons) and after being attached to stanchions, must support without breaking, the load applied to the stanchions; and will be attached to each stanchion in such a way that pulling on one section of the line between stanchions will not result in slack being taken up in the adjacent section before the stanchion tips over.

(b) Warning lines will be erected around all sides of roof work areas.

1. When mechanical equipment is being used, the warning line will be erected not less than 6 feet (1.8 meters) from the roof edge parallel to the direction of mechanical equipment operation, and not less than 10 feet (3 meters) from the roof edge perpendicular to the direction of mechanical equipment operation.

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

e. *Fall protection.* Fall protection will be used all times for the following conditions:

(1) *Excavations.* Each employee at the edge of an excavation 6 feet (1.8 meters) or more deep will be protected from falling by guardrail systems, fences, barricades, or covers. Where walkways are provided to permit employees to cross over excavations, guardrails are required on the walkway if it is 6 feet (1.8 meters) or more above the excavation.

(2) *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 holds and footholds on rebar assemblies as providing similar protection as that provided by a fixed ladder. Consequently, no fall protection is necessary while moving point to point for heights below 24 feet (7.3

meters). An employee must be provided with fall protection when climbing or otherwise moving at a height more than 24 feet (7.3 meters), the same as for fixed ladders.

(3) *Hoist areas.* Each employee in a hoist area will be protected from falling 6 feet (1.8 meters) or more by guardrail systems or personal fall arrest systems. If guardrail systems (or chain gate or guardrail) or positions 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.

(4) *Holes.* Personal fall arrest systems, covers, or guardrail systems will be erected around holes (including skylights) that are more than 6 feet (1.8 meters) above lower levels.

(5) *Leading edges.* Each employee who is constructing a leading edge 6 feet (1.8 meters) or more above lower levels will be protected by guardrail systems, safety net systems, or personal fall arrest systems. If the employer can demonstrate that it is infeasible or creates a greater hazard to implement these systems, he or she must develop and implement a fall protection plan that meets the requirements of 29 CFR 1926.502(k).

(6) *Overhand bricklaying and related work.* Each employee performing overhand bricklaying and related work 6 feet (1.8 meters) or more above lower levels will be protected by guardrail systems, safety net systems, or personal fall arrest systems, or will work in a controlled access zone. All employees reaching more than 10 inches (25 cm) below the level of a walking and or working surface on which they are working will be protected by a guardrail system, safety net system, or personal fall arrest system.

(7) *Precast concrete erection and residential construction.* Each employee who is 6 feet (1.8 meters) or more above lower levels while erecting precast concrete members and related operations, such as grouting of precast concrete members, and each employee engaged in residential construction will be protected by guardrail systems, safety net systems, or personal fall arrest systems. Where the employer can demonstrate, however, that it is infeasible or creates a greater hazard to use those systems, the employer must develop and implement a fall protection plan that meets the requirements of 29 CFR 1926.502(k).

(8) *Ramps, runways, and other walkways.* Each employee using ramps, runways, and other walkways will be protected from falling 6 feet (1.8 meters) or more by guardrail systems.

(9) *Low-slope roofs.* Each employee engaged in roofing activities on low-slope roofs with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels will be protected from falling by guardrail systems, safety net systems, personal fall arrest systems or a combination of a warning line system and guardrail system, warning line system and safety net system, warning line system and personal fall arrest system, or warning line system and safety monitoring system. On roofs 50 feet (15.24 meters) or less in width, the use of a safety monitoring system without a warning line system is permitted.

(10) *Steep roofs.* Each employee on a steep roof with unprotected sides and edges 6 feet (1.8 meters) or more above lower levels will be protected by guardrail systems with toeboards, safety nets systems, or personal fall arrest systems.

(11) *Wall openings.* Each employee working on, at, above, or near wall openings (including those with chutes attached) where the outside bottom edge of the wall opening is 6 feet (1.8 meters) or more above lower levels and the inside bottom edge of the wall opening is less than 39 inches (1.0 meter) above the walking and or working surface must be protected from falling by the use of a guardrail system, a safety net system, or a personal fall arrest system.

(12) *Inspection and maintenance.* All fall protection equipment is inspected frequently. Visual inspections are conducted prior to each use.

**Table 14–1**  
**Safety net extension**

Safety nets must 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 (1.5 meters)	8 feet (2.4 meters)
More than 5 feet (1.5 meters) up to 10 feet (3 meters)	10 feet (3 meters)
More than 10 feet (3 meters)	13 feet (3.9 meters)

## 14-6. Bloodborne pathogen

*a. Purpose.* This regulation establishes responsibilities, and procedures for the installation Bloodborne Pathogen Exposure Control Program (BBPECP). This program will reduce occupational exposure to Hepatitis B Virus (HBV), Human Immunodeficiency Virus (HIV), and other bloodborne pathogens (BBP) that employees may encounter in their workplace and in accordance with Part 1910.1030, Title 29, Code of Federal Regulations (29 CFR 1910.1030).

*b. General.* The BBPs are microorganisms in human blood that can cause disease in humans. Exposure to blood or certain other body fluids infected with a BBP can result in transmission of the infection to another person (considering the lethal effects of some BBPs, it is necessary that every possible measure to prevent exposure). At this time, the greatest bloodborne risk to healthcare and emergency service personnel is posed by the HBV. Fortunately, the risk of infection can be greatly reduced through the use of appropriate workplace practices and the administration of the Hepatitis B vaccine.

*c. Procedure.*

(1) The Exposure Control Plan (ECP) must—

(a) Identify the tasks and procedures as well as the job classifications where occupational exposure to blood occurs without regard to personal protective clothing or equipment.

(b) Outline the mechanisms for implementing this regulation and specify procedure for evaluating circumstances surrounding exposure incidents.

(c) Be accessible to employees. Employers must review and update the plan annually and more often if necessary to accommodate workplace changes.

(d) Provide guidance and requirements for engineering and workplace controls in accordance with 29 CFR 1910.1030(d)(2).

(2) *Information and training.*

(a) All identified employees are to be trained upon assignment and annually thereafter.

(b) The training must include making accessible a copy of the regulatory text of the standard and explanation of its content, general discussion of bloodborne diseases and their transmission, the ECP, engineering and work practices, response to emergencies involving blood, how to handle exposure incidents, the post-exposure evaluation and follow-up program, and signs, labels, and color-coding. There must be opportunity for questions and answers, and the trainer must be knowledgeable in the subject matter.

(3) *Methods of compliance.*

(a) Mandate universal precautions and emphasizes engineering workplace practice controls.

(b) "In general, the use of universal precautions means that all blood, body fluids, or other materials contaminated (or reasonable anticipated to be contaminated) with blood or other potentially infectious materials are treated as if known to be infectious for HIV, HBV, and other BBPs." The terms "engineering controls" and "workplace practices" refer to implementing procedures which will minimize the risk of exposure such as splashing or needle sticks. For example, this includes the use of gloves, gowns, face masks, protective eyewear, puncture-resistant sharps containers, and the bagging of contaminated materials. This also includes the provisions of adequate hand-washing facilities and the cleaning and repair of reusable equipment.

(4) *HAZCOM.* Biohazard warning labels will be affixed to containers of regulated waste and refrigerators, freezers, and other containers which are used to store or transport blood or other potentially infectious materials. Red bags or containers may be used instead of labeling. Also, labeling is not required if a facility uses universal precautions in the handling of all specimens or for containers of blood which have been tested and found to be free of HIV or HBV and released for clinical use. Labeling of containers in facilities using universal precautions will comply with 29 CFR 1910(d)(2)(xiii)(A).

(5) *Hepatitis B vaccination.*

(a) Employees, including trainees, volunteers, and other temporary staff, with duties involving direct patient contact, who were hired or began activity on or after 1 January 1997 will be covered on a MANDATORY basis. (Covered means they must complete a series of three immunizations against hepatitis B, or show evidence of prior completion of the three immunizations unless they meet any of the three exemption requirements.) This condition of employment must be made clear in job announcements, job descriptions, and contracts.

(b) The vaccination series and any booster recommended by medical authorities will be provided at no cost to the employee.

(c) Employees must sign a declination statement if they choose not to have blood tested, in accordance with 29 CFR 1910.1030, App A (see para J-1).

(6) *Post-exposure evaluation and follow-up.*

(a) All employees who experience an exposure incident will be provided with medical evaluation and treatment as indicated by the situation.

(b) Follow-up will include a confidential medical evaluation documenting the circumstances of exposure, identifying and testing the source individual if feasible, testing the exposed employee's blood if they consent, post-exposure prophylaxis, counseling, and evaluation of reported illnesses.



(c) Health care professionals will be provided specific information to facilitate their evaluation of the exposure incident and their determination of indicated treatment. All diagnoses must remain confidential.

(7) *Recordkeeping.*

(a) Medical records for each employee with an occupational exposure will be kept for the duration of employment plus 30 years.

(b) The record is to remain confidential and include the following information: name, social security number, Hepatitis B vaccination status (including dates), results of any examinations, medical testing and follow-up procedures, a copy of the health care professional's written opinion, and a copy of information provided to the health care professional.

(c) Training records are maintained for three years and include the following information: dates, contents of the training program or a summary, trainer's name and qualifications, and names and job titles of all persons attending the sessions.

(d) Medical records must be made available to the subject employee, OSHA, or anyone with the written consent of the employee.

(8) *Functions.* The installation medical authority has the overall responsibility for management of the Bloodborne Pathogens Program (BBPP) and will ensure that medical elements and activities fulfill their respective roles as follows:

(a) *Chief of Pharmacy.* The Chief of Pharmacy will provide the vaccines and or medications necessary for compliance with the BBPP.

(b) *Installation medical personnel will—*

1. Perform evaluations of blood and body fluid exposures as indicated in the evaluation packets provided by the Infection Control Department.

2. Administer injections and immunizations as indicated for compliance with the BBPP.

3. Provide education regarding BBPPs.

4. Maintain training records of individuals.

5. Maintain the medical records for active duty employees regarding pre-exposure and/or post-exposure evaluation and treatment regarding BBP.

6. Assist the local Exposure Control Officer (ECO) in the development of a local ECP which specifically addresses the circumstances unique to that particular office.

7. Support the local ECO in the implementation of the local ECP.

8. Provide direct oversight and support to local offices in the implementation of the BBPP.

9. Provide the local ECO with the framework of an ECP which can be completed with the specific information unique to the local office.

10. Assist the local ECO in determining which job classifications and tasks are at risk of exposure to BBPs and which employees should be included in the BBPP.

11. Assist the local ECO in determining which materials pose BBP hazards and the appropriate use of hazard labels and or specialized containers for transport or disposal.

12. Assist the local ECO in determining what engineering controls and workplace practices are appropriate to eliminate or minimize employee exposure.

13. Support the local ECO in providing education and training regarding BBPs.

14. Perform the pre-exposure evaluation of employees and determine if they are eligible to receive the Hepatitis B vaccine.

15. Coordinate the administration of Hepatitis B vaccinations and any other medications necessary to comply with the OSHA standard for BBPs.

16. Perform the post-exposure evaluation, treatment, and follow-up as required by the OSHA standard for BBP.

17. Maintain the medical records for civilian employees regarding pre-exposure and/or post-exposure evaluation and treatment for BBPs.

18. Coordinate with the Installation Safety Office during inspections by OSHA or other responsible regulatory agencies.

19. Provide guidance in the appropriate revising and updating of the installation BBPP.

20. Know the current medical requirements regarding BBP.

21. Determine and identify worksites at risk of exposure during regular Industrial Hygiene and Occupational Health worksite evaluations.

(c) *Commanders and supervisors—*

1. Assure compliance with the Installation BBPECP.

2. Assure that personnel assigned to their section comply with the requirements of the BBPP and the local BBP.

3. Assure that engineering controls and workplace practice controls are implemented and adhered to in order to minimize or eliminate exposure to BBP.

4. Ensure personnel enrolled in BBPECP will attend birth month scheduled training.

(d) *The local ECO will—*

1. Become familiar with the requirements of the BBPP and the requirements of 29 CFR 1910.1030.
2. Develop a local ECP, in coordination with PM and SOH.
3. Determine which materials pose a BBP hazard, in coordination with PM and SOH.
4. Assure the proper use of hazard labels and or specialized containers for the transport or disposal of hazardous materials.
5. Provide education and training regarding BBP to employees in the local section, in coordination with PM and SOH.
6. Refer employees at risk of exposure to BBP to PM and SOH for pre-exposure medical screening and Hepatitis B vaccination.
7. Refer the employee and, if available, the source of the blood or body fluid to the installation medical treatment facility (MTF), for post-exposure evaluation and treatment, in the event of a possible exposure to a BBP.
8. Assist MTF, PM, and SOH in the evaluation of exposures to BBP.

(e) *Installation safety officials will—*

1. Assure overall compliance with the installation BBPP.
2. Provide guidance in the appropriate revision and updating of the installation BBPP.
3. Maintain OSHA standards and guidelines which pertain to BBP.
4. Determine and identify worksites at risk of exposure to BBP during standard Army SOH inspections.
5. Act as facility liaison during inspections by OSHA or other appropriate regulatory agencies.

## **14-7. Ergonomics**

a. *Purpose.* This program establishes responsibilities, and procedures for implementing ergonomics, the science of fitting the work environment to the people who do the work.

b. *Functions—*

(1) *Installation safety office—*

- (a) Evaluates workplace for ergonomic problems. This includes equipment testing requirements.
- (b) Advises directors, commanders, and supervisors in resolution of ergonomic related issues.
- (c) Coordinates train the trainer workshops as required.
- (d) Develops and disseminates ergonomic awareness materials.
- (e) Maintains and reviews injury and illness records related to ergonomic problems to develop trend analysis.

(2) *Installation medical authority—*

- (a) Assists in evaluating the workplace for ergonomic problems.
- (b) Assists in conducting ergonomic training as needed.
- (c) Assists in identifying personnel with ergonomic related injuries.
- (d) Provides technical assistance in identification and resolution of ergonomic issues.

(3) *Commanders and directors—*

- (a) Establish ergonomic plan.
- (b) Ensure supervisors are trained on ergonomic factors that apply to their area of responsibility.
- (c) Ensure area of responsibility is periodically evaluated for identification of ergonomic deficiencies and take appropriate corrective action.

(d) Ensure ergonomics are implemented in all job safety analysis, as appropriate.

(4) *Supervisors—*

- (a) Develop ergonomic plan applicable to the area of responsibility.
- (b) Train employees on reporting procedures for reporting ergonomic related disorders and the importance of early reporting.

(c) Include ergonomic considerations in job safety analysis.

(d) Evaluate the area of responsibility to ensure ergonomic standards are met.

(e) Provide protective equipment to reduce potential ergonomic injury or illness while engineering controls are implemented.

(f) Ensure ergonomic considerations are integrated into the purchase of new furniture.

(5) *Individuals—*

- (a) Assist supervisors in identifying ergonomic hazards.
- (b) Report symptoms of possible ergonomic related injuries or illnesses.
- (c) Use protective devices or equipment as required.

c. *Ergonomic task force.* The task force will assist in the implementation of the Installation Ergonomics Program. The task force will oversee and participate in gathering and evaluating injury, lost work time, trends, compliant data on work sites and work processes, and recommending corrective action.

- (1) *Procedures.* Ergonomic considerations will be integrated in the job safety analysis process. Work site analysis implementation of ergonomic hazard control measures are performed in conjunction with the job safety analysis.
- (2) *Work site analysis.* Problem or hazard identification and detailed analysis are essential steps in conducting work site analysis.
- (3) *Problem or hazard identification.* Identification of jobs or work sites with ergonomic risk factors is the first step in the prevention of ergonomic hazards. This is accomplished by direct observation, case referrals and incident reports.
- (a) Direct observation is conducted by trained personnel or by workers who can identify tasks or situations which are uncomfortable and may indicate ergonomic risks.
- (b) Case referrals from CPAC, the occupational health nurse, the industrial hygienist, or the safety office may be used to identify a work area with potential ergonomic risk. For example, a laboratory technician seeks medical care for hand or wrist pain and provides an occupational history which indicates possible work site risk factors. In this situation, the referral would be from the occupational health nurse to the supervisor.
- (c) Specific health or performance events such as wrist pain, back pain, or increased mishaps may be indicative of ergonomic risks.
- (d) Incident reports such as accident reports, occupational and health reports, and supervisor monthly surveys are used to help identify ergonomic risk factors.
- (e) The following are risk factors that contribute to ergonomic related disorders that should be considered in identifying ergonomic problems or hazards:
1. Repetitive motions (especially during prolonged activities).
  2. Sustained or awkward postures.
  3. Excessive bending or twisting of the wrist.
  4. Continued elbow or shoulder elevation (for example, overhead work).
  5. Forceful exertions (especially in an awkward posture).
  6. Excessive use of small muscle groups (for example, pinch grip).
  7. Acceleration and velocity of dynamic motions.
  8. Vibration.
  9. Mechanical compression.
  10. Restrictive work station (for example, inadequate clearances).
  11. Improper seating or support.
  12. Inappropriate hand tools.
  13. Machine-pacing and production based incentives.
  14. Extreme temperatures.
  15. Extended exposure to noise.
- (f) The combined effect of several risk factors in a job workstation may lead to a higher probability of causing an ergonomic disorder.
- (4) *Detailed analysis.* Detailed analysis is necessary for further evaluation of those jobs or work sites. Personnel conducting analysis should systematically—
- (a) Consider the concept of multiple causation.
- (b) Look for trends, including age, gender, work task, and time of injury.
- (c) Identify the work task or portions of the process which contain risk factors.
- (5) *Prevention and control of ergonomic hazards.* The primary method of preventing and controlling exposure to ergonomic hazards is through effective design (or redesign) of a job or work site. The following are intervention methods in order of priority for preventing and controlling ergonomic hazards.
- (6) *Process elimination.* Elimination of the ergonomically demanding process essentially eradicates the hazard. For example, eliminating a meat wrapper's need to use a manual tape dispenser and label applicator by providing an automatic label and tape dispenser.
- (7) *Engineering controls.* Ergonomic engineering controls redesign the work site or equipment to fit the limitations and capabilities of workers. Equipment of work site redesign typically offers a permanent solution. For example, the provision of a visual display terminal (VDT) workstation that is adjustable over a wide range of anthropometric dimensions.
- (8) *Substitution.* Substituting a new work process or tool (without ergonomic hazards) for a work process with identified ergonomic hazards can effectively eliminate the hazard. For example, replacing hand tools that require awkward wrist positions (extreme wrist flexion, extension, and or deviation) with tools that allow a neutral wrist posture.
- (9) *Work practices.* Practices that decrease worker exposure to ergonomic risks include changing work techniques, providing employee conditioning programs, and regularly monitoring work practices. Also included are equipment maintenance, adjustment, and modification of current equipment or tools, as necessary.
- (10) *Proper work techniques.* Proper work techniques include methods that encourage correct posture, use of proper

body mechanics, appropriate use and maintenance of hand and power tools, and correct use of equipment and workstations.

(a) Trained ergonomic personnel in consultation with occupational health should identify those jobs that require a break-in period. Occupational health should evaluate those employees returning from a health-related absence and define the break-in period for each individual employee.

(b) Regular monitoring of operations helps to ensure proper work practices and to confirm that the work practices do not contribute to cumulative trauma injury or hazardous risk factors.

(c) Effective schedules for facility, equipment, and tool maintenance, adjustments, and modifications will reduce ergonomic hazards. This includes ensuring proper working condition, having sufficient replacement tools to facilitate maintenance, and using effective housekeeping programs. Tool and equipment maintenance may also include vibration monitoring.

(11) *Administrative controls.* Administrative controls can be used to limit the duration, frequency, and severity of exposure to ergonomic hazards. Examples of administrative controls include, but are not limited to—

(a) Reducing the number of repetitions by decreasing production rate requirements and limiting overtime work.

(b) Reducing the number of repetitions by reducing line and or production speed or by having worker input into production speed (for example, using worker-based rather than machine-based production speed).

(c) Providing rest breaks to relieve fatigued muscle-tendon groups. The length of the rest break should be determined by the effort required, total cycle time, and the muscle-tendon group involved.

(d) Increasing the number of employees assigned to the task (for example, lifting in teams rather than individually).

(e) Instituting job rotation as a preventive measure, with the goal of alleviating physical fatigue and stress to a particular set of muscles and tendons. Job rotation should not be used in response to symptoms of cumulative trauma, as this can contribute to symptom development in all employees involved in the rotation schedule rather than preventing problems. Analysis of the jobs used in the rotation schedule should be conducted by trained ergonomic and health care personnel.

(f) Providing light or restricted duty assignments to allow injured muscle-tendon groups time to rest, assisting in the healing process. Light or restricted duty assignments should be provided when physical limitations (as identified by a health care provider) allow the worker to return to work performing less than their normal work requirements. Every effort must be made to provide light or restricted duty assignments. In regard to light or restricted duty assignments.

(12) *PPE.* PPE is not necessarily recommended for controlling exposure to ergonomic hazards, because little research has been conducted to support claims of their usefulness.

(a) Ergonomic appliances such as wrist rests, back belts, back braces, and so on are NOT considered to be PPE. Consultation with trained ergonomic personnel on the effectiveness of such devices should be made prior to purchase.

(b) Ergonomic hazards should be considered when selecting PPE. PPE should be provided in a variety of sizes, should accommodate the physical requirements of workers and the job, and should not contribute to ergonomic hazards.

(13) *Health care management.* Early recognition and medical management of ergonomic disorders are critical to reduce the impact of injury on both the employee and employer.

(a) Common symptoms of musculoskeletal ergonomic disorder can include, but are not limited to pain, tingling, numbness, stiffness, and weakness in the neck, shoulders, arms, hands, back, and legs. Other symptoms can include headaches, visual fatigue, and increased errors.

(b) Soldiers and employees with symptoms of ergonomic disorders should report to medical personnel for an evaluation. Active duty Soldiers should report to their primary care provider. Civilians have the right to choose a civilian source of care. Civilians should report to the Occupational Health Nurse even if they are being treated by their own physician.

(c) Supervisors should ensure that symptomatic Soldiers and employees report for a medical evaluation in a timely manner.

d. *Training and education.* Installation Safety Office in conjunction with MEDDAC will conduct train the trainer ergonomic education for collateral duty safety officers and supervisors as needed. Collateral duty safety officers will train supervisors and supervisors will train employees.

(1) *Training curriculum.* Training will consist of but not be limited to the following:

(a) The potential risk of ergonomic disorders.

(b) The possible causes and symptoms.

(c) How to recognize and report symptoms.

(d) The means of prevention.

(e) The sources of treatment.

(2) *Types of training.*

(a) *General.* Employees who are potentially exposed to ergonomic hazards should receive formal instruction on hazards associated with their jobs and equipment. This training could be conducted at the initial orientation and annually thereafter.

(b) *Specific training.* New employees and reassigned workers should receive an initial orientation and hands-on training prior to being placed in a full production position. The initial orientation should include: a demonstration of the proper use, care, and operating procedures for all tools and equipment; use of safety equipment; and the use of safe and proper work procedures such as proper lifting techniques.

#### **14–8. Material handling**

a. *Purpose.* This paragraph establishes procedures for the safe material handling. These responsibilities and procedures will reduce the risk of material handling related injuries (that is, strains, back injuries, falls, over exertions, and so on). Local material handling programs will be implemented in accordance with Part 1910.179, Title 29, Code of Federal Regulations (29 CFR 1910.176) and this pamphlet.

b. *Procedures.*

(1) *Use of mechanical equipment.* Where mechanical handling equipment is used, sufficient safe clearances will be allowed for aisles, at loading docks, through doorways and wherever turns or passage must be made. Aisles and passageways will be kept clear and in good repair, with no obstruction across or in aisles that could create a hazard. Permanent aisles and passageways will be appropriately marked.

(2) *Secure storage.* Storage of material will not create a hazard. Bags, containers, bundles, and so on, stored in tiers will be stacked, blocked, interlocked and limited in height so that they are stable and secure against sliding or collapse.

(3) *Housekeeping.* Storage areas will be kept free from accumulation of materials that constitute hazards from tripping, fire, explosion, or pest harborage. Vegetation control will be exercised when necessary.

(4) *Clearance limits.* Clearance signs to warn of clearance limits will be provided.

(5) *Rolling railroad cars.* Derail and/or bumper blocks will be provided on spur railroad tracks where a rolling car could contact other cars being worked, enter a building, work or traffic area.

(6) *Guarding.* Covers and/or guardrails will be provided to protect personnel from the hazards of open pits, tanks, vats, ditches, and so on.

(7) *Lifting devices.* Fire protection, design, maintenance, and use of fork trucks, tractors, platform lift trucks, motorized hand trucks, and other specialized industrial trucks powered by electric motors or internal combustion engines will comply with Part 1910.178, Title 29, Code of Federal Regulations (29 CFR 1910.178).

## **Appendix A References**

### **Section I Required Publications**

#### **AR 25-400-2**

The Army Records Information Management System (ARIMS) (Cited in para 6-2*f*.)

#### **AR 50-5**

Nuclear Surety (Cited in para 11-1*e*.)

#### **AR 50-6**

Chemical Surety (Cited in para 11-1*e*.)

#### **AR 75-15**

Policy for Explosive Ordnance Disposal (Cited in para 11-7*e*.)

#### **AR 190-11**

Physical Security of Arms, Ammunition and Explosives (Cited in para 11-4.)

#### **AR 385-10**

Army Safety Program (Cited in paras 1-2*b*, 1-2*c*, 1-4, 2-1*a*, 4-1, 5-1*a*, 6-1, 6-2, 6-3, 7-1, 8-1*b*, 9-2, 10-1, 11-1*a*, 11-1*e*, 12-1, 13-1*a*.)

#### **AR 420-90**

Fire and Emergency Services (Cited in para 8-5*a*.)

#### **AR 600-3**

The Army Personnel Proponent System (Cited in para 7-1.)

#### **AR 600-8-22**

Military Awards (Cited in para 6-2*c*.)

#### **DA Pam 385-40**

Accident Reporting and Records (Cited in paras 6-4*a*(2), 6-4*b*(2), 8-4*a*, 8-6*f*, 11-1*e*.)

### **Section II Related Publications**

A related publication is a source of additional information. The user does not have to read it to understand this pamphlet.

#### **AR 11-2**

Management Control

#### **AR 25-50**

Preparing and Managing Correspondence

#### **AR 40-5**

Preventive Medicine

#### **AR 200-1**

Environmental Protection and Enhancement

#### **AR 700-141**

Hazardous Materials Information Resource System

#### **DA Pam 40-11**

Preventive Medicine

**DA Pam 385-1**

Small Unit Safety Officer/NCO Guide

**DA Pam 385-24**

The Army Radiation Safety Program

**DA Pam 385-30**

Mishap Risk Management

**DA Pam 385-61**

The Army Chemical Agent Safety Program

**DA Pam 385-69**

Biological Defense Safety Program

**CSGLD-1442**

Accident/Incident Involving Commercial Shipment of Explosives & Dangerous Materials. (Available at <http://eustis.army.mil/publications/>.)

**DA Memo 385-3**

HQDA MACOM Safety Program

**DODI 6055.1**

DOD Safety and Occupational Health (SOH) Program. (Available at <http://dtic.mil/whs/directives/>.)

**EM 385-1-1**

U.S. Army Corps of Engineers Safety and Health Requirements Manual. (Available at <http://usace.army.mil/publications/>.)

**Executive Order 12196**

Occupational safety and health programs for Federal employees. (Available at <http://archives.gov/federal-register/codification/>.)

**FAR 52.236-13**

Accident Prevention. (Available at <http://www.arnet.gov/far/>.)

**FM 5-19**

Composite Risk Management

**UFGS 01 35 29**

Safety and Occupational Health Requirements. (Available at <http://wbdg.org/>.)

**29 CFR 1910**

Occupational Safety and Health Standards. (Available at <http://www.gpo.gov/>.)

**29 CFR 1910.146**

Permit-required confined spaces. (Available at <http://www.gpo.gov/>.)

**29 CFR 1910.176**

Handling materials-general. (Available at <http://www.gpo.gov/>.)

**29 CFR 1910.178**

Powered industrial trucks. (Available at <http://www.gpo.gov/>.)

**29 CFR 1910.1030**

Bloodborne pathogens. (Available at <http://www.gpo.gov/>.)

**29 CFR 1910.1200**

Hazard communications. (Available at <http://www.gpo.gov/>.)

**29 CFR 1926**

Safety and health regulations for construction. (Available at <http://www.gpo.gov/>.)

**29 CFR 1926.502**

Fall protection systems criteria and practices. (Available at <http://www.gpo.gov/>.)

**29 CFR 1960**

Basic program elements for Federal employee occupational safety and health programs and related matters. (Available at <http://www.gpo.gov/>.)

**29 CFR 1960.2**

Definitions. (Available at <http://www.gpo.gov/>.)

**29 CFR 1960.28**

Employee reports of unsafe or unhealthful working conditions. (Available at <http://www.gpo.gov/>.)

**29 CFR 1960.29**

Accident Investigation. (Available at <http://www.gpo.gov/>.)

**29 CFR 1960.46**

Agency responsibility. (Available at <http://www.gpo.gov/>.)

**48 CFR Part 36**

FAR for Construction and Architect-Engineer Contracts. (Available at <http://www.gpo.gov/>.)

**Section III****Prescribed Forms**

Unless otherwise indicated, DA Forms are available on the APD Web site (<http://www.apd.army.mil>); DD Forms are available on the OSD Web site (<http://www.dtic.mil/whs/directives/infomgt/forms/formsprogram.htm>); Standard Forms (SF) and Optional Forms (OF) are available on the GSA Web site (<http://www.gsa.gov>).

**DA Form 1119-1**

Certificate of Achievement in Safety (Available through normal forms supply channels) (Cited in paras 6-2*d*, 6-4.)

**DA Form 4753**

Notice of Unsafe and Unhealthful Working Conditions (Cited in paras App D, App F.)

**DA Form 4754**

Violation Inventory Log (Cited in paras 8-5*h* App D, App G.)

**DA Form 4755**

Employee Report of Alleged Unsafe or Unhealthful Working Conditions (Cited in paras 8-4*a* App H.)

**DA Form 4756**

Installation Hazard Abatement Plan (Cited in paras App D, App I.)

**DA Form 5775**

Army Accident Prevention Award of Accomplishment in Safety (Cited in para 6-4*a*.)

**DA Form 5777**

United States Army Safety Guardian Award (Cited in para 6-3*d*.)

**DA Form 5778**

Army Aviation Broken Wing Award (Cited in para 6-3*f*.)

**Section IV****Referenced Forms****DA Form 759**

Individual Flight Record and Certificate



**DA Form 2028**

Recommended Changes to Publications and Blank Forms

**DD Form 836**

Dangerous Goods Shipping Paper/Declaration and Emergency Response Information for Hazardous Materials Transported by Government Vehicles

**DD Form 2272**

Department of Defense Safety and Occupational Health Protection Program

**OSHA-2H Form**

Notices of Unsafe and/or Unhealthful Working Conditions

**SF Form 1103**

U.S. Government Bill of Lading (Available through normal forms supply channels)

**Appendix B****Safety Training Available from U.S. Army Center for Health Promotion and Preventive Medicine****B-1. U.S. Army Center for Health Promotion and Preventive Medicine safety training resources**

The following USACHPPM safety training courses are available:

- a.* Advanced Waste Management Workshop.
- b.* AMEDD Center and School Courses.
- c.* Army Health Promotion Course.
- d.* Applied Ergonomics.
- e.* Basic Waste Management Workshop.
- f.* Defense Occupational Health and Environment Readiness System-Hearing Conservation.
- g.* Environmental Performance Assessment System.
- h.* Environmental Science Officers Workshop.
- i.* Food and Safety Protection Certification Workshop.
- j.* Fundamentals of Occupational Medicine.
- k.* Health Risk Assessment.
- l.* Intermediate Industrial Hygiene Topics.
- m.* Introductory and Advanced Health Risk Communication, Conflict Management Workshop.
- n.* Laser & Radiofrequency Hazards Course.
- o.* Medical Waste Transport.
- p.* Military Tropical Medicine Course.
- q.* Pharmaceutical Waste Management.
- r.* Principles of Military Preventative Medicine.
- s.* Radiation Protection Officers Course.
- t.* Transport of Bio-Medical Materials.
- u.* Tri-Service Vision Conservation and Readiness Course.

**B-2. U.S. Army Center for Health Promotion and Preventive Medicine Web site**

The USACHPPM Web site is located at <http://chppm-www.apgea.army.mil/>. The Web site contains the full schedule of courses and prerequisites.

**Appendix C****Training Programs****C-1. Recommended training**

Tables C-1, C-2, C-3, C-4, and C-5, below, are for employee training.

**Table C-1****Exposure based training matrix for all employees (including managers, supervisors, regular, contract, temporary, summer and long-term leave employees, and employees promoted or transferred)**

<b>Training standard</b>	<b>Frequency</b>	<b>Source of regulation</b>	<b>Training required</b>
Division Health and Safety Program	Employee safety orientation	Federal OSHA general duty	Supervisor and employee safety responsibilities safety communication methods, hazard Id, inspection, EH&S program.
Emergency preparedness and fire prevention/evacuation	Employee safety orientation/annually/ Fire/tornado drill	29 CFR 1910.38, 134, 151, 156, 157, 165, 1200 Subpart E	Procedure to be followed in the event of emergencies, evacuation procedure, evacuation drill, overview of emergency action plan and fire prevention plan including fire hazards at the site.
Hazard Communication	Employee safety orientation/annually/refresher with product change or product addition or when employee understanding is questioned (NOTE: Some states require annual training)	29 CFR 1910.1200, 119, 134, 157, 120, Subpart Z	Substance ID and properties, PPE, spill prevention, and containment, health hazards, MSDS, medical surveillance, overview of site HAZ-COM plan.
Ergonomics (PROPOSED)	Employee safety orientation/employee understanding is questioned, work site changes, job changes, equipment changes	Federal OSHA general duty clause AR 40-5 DA Pam 40-21	Causes and prevention of CTD workstation evaluation, documentation, medical surveillance requirements.
Safe lifting	Employee safety orientation/changes in workplace, equipment/increase in injury rates	Federal OSHA General Duty Clause	Overview of back anatomy and physiology review of basic lifting techniques, application to workplace setting
Workplace violence	At time of hire unless employee understanding is questioned	Federal OSHA general duty clause	Causes/prevention of workplace violence, recognizing and avoiding potential deadly situation, conflict avoidance, response techniques, reporting requirements, company policy on workplace violence.
Access to employee exposure and medical records	Employee safety orientation/annually for employees exposed to toxic substances or harmful physical agents	29 CFR 1910.1020, 1200, 95, 134, Subpart Z	Existence, location, and availability of records, person responsible for maintaining and providing access to records.
Specification for accident prevention signs and tags	Employee safety orientation/employee understanding is questioned	29 CFR 1910.144, 145	Danger/caution signs and tags, special precautions when these are encountered.
Employee alarm systems	Employee safety orientation/assignment to a different area	29 CFR 1910.165, 38	Inform employee of preferred means of reporting emergencies and how system alarms function.
Walking and working surfaces	Before work or when employee understanding is questioned	29 CFR Subpart D	Use of ladders, guarding holes, floors, use of railings, toeboards, stairways.

**Table C-2****Exposure based training matrix for managers/supervisors**

<b>Training Standard</b>	<b>Frequency</b>	<b>Source of Regulation</b>	<b>Training Required</b>
OSHA regulations	As needed for management staff responsible for OSHA regulations	As needed for facility	Overview of OSHA regulations and reporting (that is, OSHA 10 or 30 hour training course).
Workplace violence/supervisor roles	At time of hire and annually	Federal OSHA general duty clause	To supplement employee program, more in depth training on recognition prevention and role of supervisors in dealing with potentially violent employees, company policy.

**Table C-2**  
**Exposure based training matrix for managers/supervisors—Continued**

Senior manager/manager/supervisor safety competency training	Annually	Federal OSHA general duty clause	EH&S policies and supervisor responsibilities, accident investigation, emergency procedures, reporting requirements, site specific issues.
Recordkeeping	As needed for management staff responsible for record keeping	As needed for facility	In depth training for OSHA 300 recordkeeping, accident and claims files, length of time to maintain.
Train the trainer	As needed for supervisors responsible for employee safety programs	As needed for facility	Introduction to basic training program, overview of adult learning models, review of learning aids for safety program training.

**Table C-3**  
**Exposure based training matrix for affected employee groups**

Training standard	Frequency	Source of regulation	Training required
Defense Occupational and Environmental Health Readiness System - Hearing conservation	Upon initial assignment to area/annually to employee exposed to 8 hr. TWA of 85 dBA	29 CFR 1910.1020, 95	Inform employees of effects of noise on hearing, purpose of hearing protection, advantage, disadvantage and attenuation of various types, how to select, use and fit test protection, purpose of audiometric tests, and explain test procedures, the structure and elements of the Hearing Conservation Program, the mandatory requirement to wear assigned protective equipment, the administrative actions which may follow for failure to do so and the use of hearing protection.
Bloodborne pathogens	Upon initial assignment where exposure may take place/annually	29 CFR 1910.1030, 1200, 1020	Explanation of the standard contents, standard to be accessible to employees, transmission of exposure control plan, engineering and work practice controls, PPE, Hepatitis B vaccine, emergency response involving blood, how to handle occupational exposures, past exposure evaluations, signs and labels.
Personal protective equipment (PPE)	Upon initial use of equipment/changes in PPE or workplace, previous training becomes obsolete/employee understanding is questioned	29 CFR 1910.132 -139, 1043 Subpart I	When PPE is necessary what PPE is necessary, how to don, adjust and wear PPE, limitations of PPE, proper care, maintenance, useful life and disposal of PPE.
Eye and face protection	Upon initial assignment for employees who must wear this PPE/change of condition/employee understanding is questioned	29 CFR 1910.133, 1200, 252	Limitation of the equipment and precautions by manufacturer.
Forklift operation	Upon assignment to forklift/periodically as regulation requires	29 CFR 1910.178	Safe operation, fueling, load distribution and inspection of the truck.
Powered platforms	Upon assignment to powered platforms/changes in equipment, operations/employee understanding is questioned	29 CFR 1910.66, 67, 68 Subpart F	Personnel trained in operations, safe use, inspection, and emergency response.

**Table C-3**  
**Exposure based training matrix for affected employee groups—Continued**

Boat operator training	Upon assignment to boat operations	EM 385-1-1	Training and licensing program for small craft operators. Requires USCG licensing (and training) for operators of larger craft.
Power presses	Upon assignment to power press operation or maintenance/changes in equipment, operations/employee understanding is questioned	29 CFR 1910.217 Subpart O	Proper operation and safe work methods for the machine, inspection and maintaining press for maintenance.
Hazardous energy (lockout/tagout)	Upon assignment to equipment affected by lockout	29 CFR 1910.147	Respect for lock and tag, no attempt at removal, checking equipment after lockout removed.
Combustible spray coating	Upon assignment to combustible spray coatings/changes in equipment, operations/employee understanding is questioned	29 CFR 1910.107	Application of flammable or combustible materials applied as a spray or hydraulic atomization, dry powders, instruction on ventilation systems, use of PPE.
USACE construction safety	Upon assignment to oversee/work on construction projects	EM 385-1-1	Discusses contractor oversight in construction as well as safety for personnel performing/overseeing construction.
Welding, cutting, brazing	Upon assignment to weld, braze or utilize torches, service welding machines, fire watch/upon assignment to supervise this area/as needed to maintain weld experience every 90 days	29 CFR 1910.252, 133, 134, 151, 157 Subpart Q	Welder must pass weld procedure specification and weld performance specs, welder able to address different atmospheres. Fire watches trained in extinguishing methods.
DOT HAZMAT employee training	Upon assignment to work in shipping, receiving or work in transportation of hazardous materials/biannually	29 CFR 1910.1201 49 CFR 172.704,173.3	Hazards material properties shipping regulations, manifests, labels, and placards, emergency procedures.
Chemical safety for chemical handlers	Upon assignment to work in operations involving the immersion of materials in liquids or vapors for cleaning or etching services/biannually	29 CFR 1910.1450, 1200 Subpart Z	Trained in specific chemicals used, PPE and use of eyewash and safety showers.
Hazard waste generator/handlers	Upon assignment to work with hazardous waste/minimum 40 hours off-site, 3 days on site/Supervisor at least 9 additional hours, refresher annually/occasional workers 24 hours off-site	29 CFR 1910.120, 1200, 134, 141, 156, 157, 1043	Personnel responsible for site safety and health and health hazards, PPE, work practices, engineering controls, medical surveillance, general knowledge of site safety plan, supervisor receives training on managing operation.
Slings	Employees designated by the employer/initially/when employee understanding is questioned	29 CFR 1910.184	Usually to manufacturer's specifications for inspecting for fitness, damage or defects in the sling.
Cranes	Employees who lift materials with a crane/initially/employee understanding is questioned	29 CFR 1910.179, 180	Safe operation of a crane and inspection of cables, trolley, other functioning parts, understand pendant.
Radiation safety Laser safety	Upon assignment to or frequenting any portion of the radiation area for either ionizing (can break chemical bonds) or non-ionizing (cannot break chemical bonds) radiation/annually	29 CFR 1910.97, 1096, 1200, 1020	Inform employees of occurrence of radioactive material or radiation in area, instruct in safety problems associated with exposure, precautions needed to minimize exposure, PPE, reports of exposure, inform employee of individual exposure level/train employees who install and operate laser equipment and prove qualification.

**Table C-3  
Exposure based training matrix for affected employee groups—Continued**

Ventilation	Upon assignment to work in and around surface tank operations/process changes/employee knowledge is questioned	29 CFR 1910.94	Hazards of specific job, PPE, first aid procedures applicable to the hazards.
Flammable and combustible liquids	Employees assigned to operation/employee knowledge is questioned	29 CFR 1910.106, 107, 1200	Detailed, printed instructions on flow, emergency procedures, operators thoroughly informed about locations and operations of valves and other equipment, safe grounding.
Storage and handling of LPG and gas handling safety	Upon assignment to perform maintenance or operate LPG equipment/personnel dispensing LPG into fuel container/employee knowledge is questioned	29 CFR 1910.110, 151, 252, Subpart S	Operations personnel trained and knowledgeable in proper operations of process equipment as well as loading/unloading duties. Maintenance personnel must be trained in such functions. Train dispensing attendant in duties.
Forging machines	Frequency not explicitly outlined/employees who operate, maintain forge machinery or equipment	29 CFR 1910.218	Proper inspection and maintenance techniques and activities for the specific equipment.
Occupational exposure to hazardous material in laboratories	Initial assignment and prior to assignments involving new exposure situation/frequency determined by employer/all employees who work in laboratories	29 CFR 1910.1200, 1450	Methods and observation used to detect presence or release of hazardous chemicals, physical and health hazards of chemicals, measure to protect against chemical hazards, and applicable details of the written chemical hygiene plan.
Hand and portable power operated and other hand held equipment and compressed air	Upon assignment to use these tools/when employee understanding is questioned	29 CFR 1910.242	Employees trained in the safe condition of tools and equipment including any tools furnished by the employee, PPE required. Compressed air for cleaning must be under 30 p.s.i.
Powder-actuated hand tools	Upon assignment to use these tools/employee understanding is questioned	29 CFR 1926.302	Employees trained in loading, firing, PPE, flammables, materials to be used on, misfires.
Pneumatic fastening tools, nailers, staplers and other similar equipment	Upon assignment to use these tools/employee understanding is questioned	29 CFR 1926.302	Employees trained in the safe condition of tools and equipment including any tools furnished by the employee, PPE required
Die setting	Upon assignment to perform die setting, when employee competence is questioned	29 CFR 1910.217,218	Employees trained in the care of inspection and maintaining dies.
Safety/Ergonomics Committee	Upon assignment to a committee	MAGNA	Members trained in Health and Safety Act, Federal/state OSHA regs, inspections, accident investigations, JHA.

**Table C-4**  
**Exposure based training matrix for maintenance and facilities personnel**

Training standard	Frequency	Source of regulation	Training required
Confined space operations	Upon assignment to enter confined space/annually	29 CFR 1910.146	Confined space entry and operation defined, permit or non-permit spaces, identification of spaces at site, ventilation, air monitoring, PPE, use of site permit program.
Control of hazardous energy	Upon assignment to use or be affected by lockout/tagout/annually/change in job assignment/change in machines, equipment or process/when annual inspection reveals deviations from the procedure	29 CFR 1910.147	Recognition of applicable energy sources, type and magnitude of energy used, affected employees instructed in the purpose and use of energy control procedures, prohibit attempts to restart equipment when it is locked out. Training certification must contain employee's name and dates of training.
Respiratory protection	Upon assignment to wear respirators/annually	29 CFR 1910.134, 38, 120, 156, 252, 1200, Subpart Z	Proper selection, use, care of respirator, routine use and emergency use instructions, safe use of respirators in dangerous atmospheres, able to fit and wear in test atmosphere, adjusting the respirator, cleaning and disinfecting the respirator.
Low voltage electrical safety	Upon assignment to work with low voltage electrical or wiring/annually	29 CFR 1910.335 Subpart I Subpart S	Safety related work practices for both qualified and unqualified employees working on near or with wiring.
Asbestos awareness	Upon assignment to work with asbestos or suspected asbestos/annually	29 CFR 1910.1001, 134, 1200 Subpart M	Health affects of asbestos, relationship to smoking, quantity, location, release, storage, specific nature of operation that could result in exposure, engineering controls, work practices, protection, respirator training, and medical surveillance.
Lead awareness	Upon assignment to work with lead or suspected lead or potential exposure/annually	29 CFR 1910.1025, 134, 1200	Specific operations that could result in exposure above the action limit, respirator training, purpose, and description of medical surveillance program, engineering controls, contents of any compliance plan.

**Table C-5**  
**Exposure based training matrix for emergency preparedness and response personnel**

Training standard	Frequency	Source of regulation	Training required
Emergency response team training	Upon assignment/frequently enough to ensure that each team member is able to perform assigned duties/annually	29 CFR 1910 Subpart E Subpart L	Training should be quality training in sound fire fighting and other emergency response principles.
Hazardous waste operations & emergency response (Hazardous Waste Worker)	Before employees engage in hazardous waste operation, emergency response/annually	29 CFR 1910.120, 1200, 134, 151, 156, 157	1 <sup>st</sup> responder, 1 <sup>st</sup> responder operation level, HAZMAT tech, HAZMAT specialist, incident commander, all require specific training, basic spill prevention and control hazard and risk assessment, notification of medical requirement.

**Table C-5**  
**Exposure based training matrix for emergency preparedness and response personnel—Continued**

CPR and first aid	Upon assignment to render first aid and at periodic intervals to maintain competence	29 CFR 1910.151, 156,	General first aid skills and CPR, qualifications and content of training should be determined by responsible medical consultant. Required in plants not in close proximity to hospital, clinic or infirmary.
Portable fire extinguishers	Upon initial assignment where fire extinguisher are for employee use and those designated to use fire fighting equipment as part of emergency action plans/annually	29 CFR 1910.157, 156	Recognize the type of fire, operate the appropriate fire extinguisher properly, how to fight the fire, incipient fires, and when to leave if fire becomes uncontrollable.
Site alarm systems/fire protection systems	Employee safety orientation/assignment to a different area	29 CFR 1910.165, 38, 160	Inform employees of preferred methods of reporting emergencies and how alarm and fire protection systems function.
Emergency management	Employees designated to implement site emergency plan and business continuity program/annually	Facility policy	Training on site emergency management.
Standpipe and hose systems	Employees who conduct inspections of the systems/no explicit frequency given	29 CFR 1910.158	Be able to perform the required maintenance and inspections on systems, usually outlined by the manufacturer.
Fixed extinguishing systems	Employees who inspect, maintain and operate the system/initially/annually to review training on functions	29 CFR 1910.160	Be able to inspect, maintain, operate, repair system adequately, usually outlined by the manufacturer.
Fire detection systems	Employees who service, maintain or test the system/initially/frequently enough to ensure competence	29 CFR 1910.164	Specific system maintenance and testing requirements.

## C-2. Training requirements

For training requirements, see chapter 7 of this pamphlet.

## Appendix D

### Standard Army Safety and Occupational Health Inspections Mandatory Procedures

Installation-level inspections will use the following procedures and process:

#### D-1. Standard Army Safety and Occupational Health Inspections

*a.* All workplaces will be inspected at least annually using Standard Army Safety and Occupational Health Inspection procedures.

*b.* Facilities and operations involving special hazards will be inspected more frequently as determined by qualified SOH personnel.

*c.* Civilian personnel offices may request assistance in determining environmental differential pay or hazard pay cases. In these cases, qualified safety and health professionals will evaluate specific workplaces and conditions and provide a professional opinion as to the nature of the hazards and the required protective procedures.

*d.* Inspections of workplaces in contractor installations where fewer than 25 DA personnel are employed will be at the discretion of the Army Headquarters commander based on existing conditions. While no formal annual inspection is required, HQDA and Army Headquarters commanders are required to ensure the health and safety of their employees in the contractor facility.

#### D-2. Standard Army Safety and Occupational Health Inspections for all work sites

*a.* Unless specifically exempted in this paragraph, Standard Army Safety and Occupational Health Inspections for all work sites will be conducted by qualified SOH professionals as defined in section II of the glossary

*b.* SASOHIs for tenant activities will be conducted in accordance with the host installation and tenant activity

agreement. The SASOHIs for work sites meeting the criteria specified below may be performed by trained, qualified, and appointed collateral duty safety personnel. If there is a dispute over interpretation of safety and health standards, hazards, or risk severity and probability, a qualified SOH professional, as defined in section II of the glossary, will make the final determination on the disputed issue. Personnel conducting SASOHIs will have access to diagnostic equipment and to personnel necessary to identify, document, and analyze the significance of the hazards discovered during the inspection. Current reference materials pertinent to the work site, such as standards, regulations, SOPs, hazard analyses/job hazard analysis (JHA), risk assessments, MSDS, TMs, and FMs, will be readily available.

*c.* Criteria for work sites where SASOHI can be conducted by collateral duty safety personnel—

(1) Low risk operations as determined by a written hazard assessment specified in subparagraph c(3), below.

(2) Lost time job-related injury rate of no more than 10 per 1,000 personnel (military and civilian) averaged for the last 3 years.

(3) Written hazard assessment (see Part 1910.132, Title 29, Code of Federal Regulations (29 CFR 1910.132)) for current operations on file at the work site, conducted by qualified civilian or military SOH professional as defined in section II of the glossary.

*d.* Qualifications for collateral duty safety personnel conducting SASOHIs include—

(1) Appointment and validation by the activity commander that personnel can accomplish tasks required in Part 1960.57, Title 29, Code of Federal Regulations (29 CFR 1960.57) and outlined below—

(2) Recognize hazards.

(3) Assess risks including the requirement and procedures to contact safety or health professionals when risks are assessed medium or higher.

(4) Advise on abatement options, complete abatement documentation and follow-up on corrective actions.

(5) Use OSHA standards and Army requirements appropriate to the work site(s).

(6) Use equipment necessary to conduct a thorough inspection.

(7) Complete supervisor and/or employee training as required by Part 1960.55, Title 29, Code of Federal Regulations (29 CFR 1960.55) and Part 1960.59, Title 29, Code of Federal Regulations (29 CFR 1960.59).

(8) Conduct at least one inspection accompanied by qualified safety personnel as defined in section II of the glossary.

### **D-3. Collateral duty**

Collateral duty personnel should conduct their inspections on a quarterly basis, and a qualified safety person, as defined in section II of the glossary, should accompany them on at least one inspection per year in order to assure quality inspections are being conducted.

### **D-4. Standard Army Safety and Occupational Health Inspection standards**

SASOHIs may be conducted with or without prior notice. No-notice inspections will be used when local safety and health personnel determine they will provide a significantly more meaningful assessment of actual operating conditions and practices. However, appropriate representatives of civilian employees and recognized employee organizations will be notified when management receives prior notice of an inspection.

*a.* A representative of the official in charge of a workplace and an authorized representative of civilian employees will be given the opportunity to accompany the inspector during physical inspection of workplaces. Installation and activity commanders, or their designated representative, may deny the right of accompaniment to any person who, in their judgment, will interfere with the inspection.

*b.* The inspector conducting SASOHI will consult a sampling of personnel on matters affecting their safety and health and offer them the opportunity to identify, confidentially, unsafe or unhealthful working conditions in the work areas.

*c.* When an “imminent danger” situation is discovered, the immediate supervisor and activity head will be notified as soon as possible.

(1) The inspector will provide technical advice to the supervisor on the scene, who will correct the condition or cease operation and withdraw personnel from exposure.

(2) If the inspector finds the hazard cannot be immediately eliminated, he or she will notify the installation SOH official. If this official finds that corrective action is inadequate, he or she will secure approval of the commander or an authorized representative of the commander for measures to be taken to prevent employee exposure to the hazard.

(3) Imminent danger hazards from which personnel have been withdrawn as an interim measure will be identified on the forms described in subparagraph *i*, below.

(4) Commanders may authorize specific safety personnel to temporarily halt operations when imminent danger situations are found.

*d.* Upon completion of a formal inspection, a closing conference will be held with the commander or their designated representative, and a notice of unsafe or unhealthful working conditions will be discussed for each RAC 1,



2, or 3 hazard that was not corrected immediately. An appropriate employee representative will be given the opportunity to participate in the closing conference.

*e.* Written reports of violations resulting from SASOHI will be provided to the head of the activity or the commander of the unit inspected. These reports will cite hazards and safety management deficiencies and will recommend corrective actions. DA Form 4753 (Notice No. of Unsafe or Unhealthful Working Conditions) may be used for this purpose (see app F for a sample form). RAC 1 and 2 violations that cannot be corrected within 30 calendar days of discovery will be recorded and maintained at the installation on DA Form 4756 (Installation Hazard Abatement Plan) (see app H for a sample form and instructions). Written reports of inspections will be retained on file for 5 years after the deficiencies have been corrected. Automatic data processing systems may be used to facilitate the recording and documentation of SASOHI and abatement plans provided the requirements of this regulation are met.

*f.* Notices of violations for RAC 1 or 2 hazards detected during SASOHI will be recorded on DA Form 4753 or equivalent. Copies of each notice of unsafe or unhealthful conditions will be given to the appropriate official in charge of the workplace and any participating employee representative. Notices will be posted by the official in charge of the workplace where the condition was discovered. Where it is not practical to post the notice at or near the hazard, it will be posted in a prominent place where it will be readily observable by all affected personnel. Delivery and posting will take place within 15 days of detection for safety violations and 30 days for health violations. The notices will remain posted for 3 working days or until correction, whichever is later. All posted notices will describe the nature and severity of the violation, the substance of the abatement plan, and interim protective measures.

*g.* All violations of standards detected during SASOHI will be entered on DA Form 4754 (Violation Inventory Log) or equivalent. (See app G for a sample form.) This log will be used to monitor compliance. It will show all violations in order of discovery and prescribe an abatement date and the date for follow-up on correction of the deficiencies.

*h.* Procedures will be established to follow up on the correction of deficiencies identified during a SASOHI. If corrective action has not been accomplished or it is discovered that interim safety measures are not being enforced, the inspector will inform the installation SOH official who will determine remedial action, to include notifying the installation or activity commander if appropriate. For all uncorrected violations, entries on DA Form 4756 will reflect the revised corrective action schedule and appropriate remarks.

*i.* All SOH inspection procedures will conform to security regulations.

## **Appendix E**

### **Department of Defense Safety and Occupational Health Program**

#### **E-1. DD Form 2272**

Figure E-1, below, is a sample DD Form 2272 (Department of Defense Safety and Occupational Health Program).



**DEPARTMENT OF DEFENSE  
SAFETY AND OCCUPATIONAL HEALTH PROTECTION PROGRAM**

The Occupational Safety and Health Act of 1970, Executive Order 12196 and 29 CFR 1960 require the heads of Federal agencies to establish programs to protect their personnel from job safety and occupational health hazards.

1. The Department of Defense (DoD) designated agency safety and occupational health official is the Assistant Secretary of Defense (Force Management and Personnel).
2. The DEPARTMENT OF THE ARMY designated safety and occupational health official is:  
(DoD Component)  
ASA (I&L) , WASHINGTON, DC  
(Title) (Address)
3. The FT. OWENS safety and occupational health designee is:  
(Name of Installation/Facility)  
MR. TUCKER , SAFETY MANAGER  
(Name) (Title)
4. The FT. OWENS safety point of contact is:  
(Name of Installation/Facility)  
MS. JONES , 555-9876  
(Name) (Telephone Number)
5. The FT. OWENS occupational health point of contact is:  
(Name of Installation/Facility)  
MR. GLASS , 555-0102  
(Name) (Telephone Number)

WAPA CLINIC, FT. OWENS HAS THE RESPONSIBILITY TO:  
(Name of Installation/Facility)

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. COMPLY with the applicable Occupational Safety and Health Administration (OSHA)/DoD/DoD Component safety and occupational health standards.</li> <li>2. SET UP PROCEDURES for submitting and responding to employee reports of unsafe and unhealthful working conditions.</li> <li>3. ACQUIRE, MAINTAIN, AND REQUIRE the use of approved personal protective equipment and safety equipment.</li> <li>4. INSPECT ALL WORKPLACES with participation by civilian employee representatives to identify potential hazards.</li> <li>5. ESTABLISH PROCEDURES to assure that no worker is subject to restraint, interference, coercion, discrimination, or reprisal for exercising his/her rights under the DoD safety and occupational health program.</li> </ol> | <ol style="list-style-type: none"> <li>6. POST NOTICES of unsafe or unhealthful working conditions found during inspections.</li> <li>7. ASSURE PROMPT ABATEMENT of hazardous conditions. Workers exposed to the conditions shall be informed of the abatement plan. Imminent danger corrections must be made immediately.</li> <li>8. SET UP A MANAGEMENT INFORMATION SYSTEM to keep records of occupational accidents, injuries, illnesses and their causes; and to post annual summaries of injuries and illnesses for a minimum of 30 days at each installation/facility.</li> <li>9. CONDUCT SAFETY AND OCCUPATIONAL HEALTH TRAINING for management, supervisors, workers and worker representatives.</li> </ol> |
|--|---|

**DOD PERSONNEL HAVE THE RESPONSIBILITY TO:**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. COMPLY with all applicable OSHA/DoD/DoD Component safety and occupational health standards</li> <li>2. COMPLY with <u>FT. OWENS</u><br/>(Name of Installation/Facility)<br/>policies and directives relative to the safety and occupational health program.</li> </ol> | <ol style="list-style-type: none"> <li>3. USE personal protective equipment and safety equipment provided by your installation/facility.</li> <li>4. REPORT hazardous conditions, injuries, illnesses, or other mishaps promptly to your supervisor or to the safety or occupational health point of contact for your installation/facility.</li> </ol> |
|--|---|

**DOD PERSONNEL AND CIVILIAN EMPLOYEE REPRESENTATIVES HAVE THE RIGHT TO:**

- |  |   |
|--|---|
| <ol style="list-style-type: none"> <li>1. HAVE ACCESS to applicable OSHA/DoD/DoD Component standards, installation/facility injury and illness statistics, and safety and occupational health program procedures.</li> <li>2. COMMENT on alternate standards proposed by DoD/DoD Component.</li> <li>3. REPORT AND REQUEST INSPECTIONS OF UNSAFE AND UNHEALTHFUL WORKING CONDITIONS to appropriate officials who include, in order of preference, the immediate supervisor, the safety or occupational health point of contact, the safety and occupational designee for your installation/facility, the installation/facility commander, the safety and occupational health designee</li> </ol> | <ol style="list-style-type: none"> <li>3. (Continued) for your DoD component, the safety and occupational designee for DoD, and the Secretary of Labor. However, the Secretary of Labor encourages personnel to use DoD procedures for reporting hazardous conditions as the most expeditious means to achieve abatement. The hazard report form provided by your installation/facility should be used for this purpose. Anonymity, when requested, is assured.</li> <li>4. PARTICIPATE in the installation/facility safety and occupational health program. Civilian workers shall be authorized official time to participate in the activities provided by the DoD safety and occupational health program.</li> </ol> |
|--|---|

**OTHER INFORMATION:**

- |   |  |
|---|--|
| <ol style="list-style-type: none"> <li>1. When the safety or occupational health point of contact for your installation/facility is notified by a worker of a hazardous worksite condition, he/she will ensure an inspection of the worksite and he/she will report the results of the inspection in writing to the worker making the report.</li> <li>2. Inspector General channels may be used to investigate complaints from either DoD civilian or military personnel concerning alleged acts of discrimination or reprisal due to participation in safety and occupational health activities. For DoD civilian personnel, allegations of reprisal may also be initiated by them</li> </ol> | <ol style="list-style-type: none"> <li>2. (Continued) in accordance with applicable appeal procedures, or administrative or negotiated grievance procedures.</li> <li>3. For further information about the installation/facility safety and occupational health program, procedures, standards, committees, Federal laws, or other related matters, contact the safety or occupational health point of contact for your installation/facility as noted on this poster.</li> <li>4. How well you carry out your safety and occupational health responsibilities will be an important factor in the success of the program.</li> </ol> |
|---|--|

DD FORM 2272, NOV 2000

PREVIOUS EDITION MAY BE USED.

Figure E-1. Sample DD Form 2272, Department of Defense Safety and Occupational Health Protection Program

## **E-2. Army Employee Hazard Reporting**

See paragraph 8-4a on posting DD Form 2272.

## **Appendix F**

### **Notice of Unsafe or Unhealthful Working Conditions**

See sample DA Form 4753, below.

#### **F-1. Legend for Figure 4-1 DA Form 4753**

Figure F-1, below, is a sample DA Form 4753 (Notice of Unsafe or Unhealthful Working Conditions).

**NOTICE NO. 07-101 OF**

**UNSAFE OR UNHEALTHFUL**

**WORKING CONDITION**

**(DO NOT REMOVE NOTICE UNTIL CONDITION IS ABATED)**

For use of this form, see DA PAM 385-10; the proponent agency is OCSA.

<p>1. UNIT INSTALLATION USADTC School Brigade Technical Services Library</p>	<p>3. DATE OF INSPECTION 30-31 Oct 2007</p>
<p>2. OFFICIAL IN CHARGE OF WORKPLACE J. Lang</p>	<p>4. STANDARD VIOLATED 29 CFR 1910.1001(c)</p>
<p>5. LOCATION OF VIOLATION Main Library room, particularly NE and NW corner desks</p>	
<p>6. DESCRIPTION OF UNSAFE OR UNHEALTHFUL CONDITION Air sampling by Industrial Hygiene Associate Inc. indicates that the personnel in this area are exposed to respirable asbestos fibers well in excess of permissible levels. Exposure is intermittent, apparently caused by the effect of physical disturbances of the ceiling material by air conditional vibration and air flow.</p>	
<p>7. RECOMMENDED ABATEMENT PROCEDURES</p> <p>a. Interim Remove employees from the area. Clean-up employees will be selected, trained, and equipped in accordance with applicable regulations. All materials removed to temporary library will be thoroughly cleaned by capable contractor.</p> <hr/> <p>b. Final: Abatement should be completed by Airborne exposure will be eliminated by removal or encapsulation of asbestos-containing installation. Air will be sampled and shown to be within allowable limits before routine reoccupancy.</p>	
<p>8. ADDITIONAL INFORMATION CONCERNING THIS VIOLATION CAN BE OBTAINED FROM <u>Safety or Occupational Health Services</u> TELEPHONE NO. <u>X2345/9876</u></p>	

DA FORM 4753, OCT 1978

APD PE v2.00

**Figure F-1. Sample DA Form 4753, Notice of Unsafe or Unhealthy Working Conditions**

## **F–2. Instructions for completion of DA Form 4753**

- a. Block 1.* Enter name of unit, and installation on which hazard was found.
- b. Block 2.* Enter name of workplace supervisor.
- c. Block 3.* Enter date of the inspection.
- d. Block 4.* Enter specific reference to the standard violated (AR, OSHA).
- e. Block 5.* Enter exact location of the violation.
- f. Block 6.* Describe hazardous condition found in terms of physical standards and the Risk Assessment Code (RAC) (see chap 3).
- g. Block 7.* Describe interim safety measures supervisory personnel and employees should maintain until the hazard is abated to an acceptable level.
- h. Block 8.* Enter name of installation safety and occupational health manager, and their office phone number.

## **F–3. Corrective action**

When representatives issue notice of unsafe or unhealthful conditions, local officials should treat such notices in the same manner as similar internal notices and provide for abatement of significant deficiencies.

## **Appendix G Violation Inventory Log**

### **G–1. Example DA Form 4754**

Figure G–1, below, is a sample DA Form 4754 (Violation Inventory Log).

VIOLATION INVENTORY LOG								
For use of this form, see DA PAM 385-10; the proponent agency is OCSA.								
LOG OF SCHEDULE OF CORRECTIVE ACTION-COMPLIANCE WITH SAFETY AND HEALTH STANDARDS								
NAME OF INSTALLATION U.S. Army Driver Training Center, Fort James, AR (School Bde Tech Service Library)								
ITEM	LOCATION OF INCONSISTENCY <sup>1/</sup> <i>a</i>	OSHA REFERENCE		INCONSISTENCY <i>d</i>	CORRECTIVE ACTION <i>e</i>	TARGET DATE FOR CORRECTIVE ACTION <i>f</i>	DEGREE OF DANGER <sup>3/</sup> <i>g</i>	ESTIMATED COST <i>h</i>
		TITLE/PART <i>b</i>	SUB-PART <sup>2/</sup> <i>c</i>					
I	Main Room (stacks) NE & NW corners and throughout.	29 CFR 1910.1001  TB MED 513	(c)	Personnel are exposed to asbestos concentration several times higher than standards.	Remove or encapsulate asbestos in accordance with engineering study. Clean contaminated surfaces and material to levels below cited references. Withdraw personnel during interim.	Interim: accomplished Final: 26 May	LA(I)	

NOTES: <sup>1/</sup> Such as "Carpenter Shop and/or Building Number." <sup>2/</sup> Include paragraph number in another code if further referenced. <sup>3/</sup> Use Roman numerals (Category I - Imminent danger, Category II - Serious hazard, Category III - Moderate hazard, Category IV - De minimus hazard)

DA FORM 4754, OCT 1978

APD PE v2.00

Figure G-1. Sample DA Form 4754, Violation Inventory Log

## **G-2. Violation abatement status**

See paragraph 8-5 on use of the DA Form 4754 to provide access to violation abatement status.

## **Appendix H Alleged Unsafe or Unhealthful Working Conditions**

### **H-1. DA Form 4755**

Figure H-1, below, is a sample DA Form 4755 (Employee Report of Alleged Unsafe or Unhealthful Working Conditions).

<b>EMPLOYEE REPORT OF ALLEGED UNSAFE OR UNHEALTHFUL WORKING CONDITIONS</b> <small>For use of this form, see DA PAM 385-10; the proponent agency is OCSA.</small>		
<small>This form is provided for the assistance of any complainant and is not intended to constitute the exclusive means by which a complaint may be registered with the local Safety Office (Rej OSHA Poster on rights of employees and their representatives).</small>		
The undersigned (check one) <input checked="" type="checkbox"/> Employee <input type="checkbox"/> Representative of employees <input type="checkbox"/> Other (Specify) _____		
believes that a job safety or health hazard exists at the following place of employment: <b>Technical Services Library (Main Room), Bldg. 6001, School Brigade</b>		
Does this hazard(s) immediately threaten serious physical harm? <input checked="" type="checkbox"/> Yes <input type="checkbox"/> No <small>If "yes" checked, immediately contact your supervisor or safety representative.</small>		
Name of official in charge	<u>Mrs. J. Lang</u>	Telephone <u>x2345</u>
Operation/Activity <u>Library</u>		
Exact location of worksite _____ <u>The whole main room, especially near the air condition vents.</u>		
1. Kind of operation _____ <u>Shelving and signing out publications, helping patrons.</u>		
2. Describe briefly the hazard which exists there including the appropriate number of employees exposed to or threatened by such hazard <u>White powder blows down from the ceiling when the air condition runs. Sometimes it gets all over the desks. A lot of people say it might be asbestos, but no one will check and tell us for sure. Only 4 of us work in the room, but a lot of patrons come through.</u>		
3. List by number and/or name the particular occupational safety and health standard (s) which may have been violated, if known <u>I don't know, but I know it's against the law.</u>		
4. (a) To your knowledge, has this hazard been the subject of any union/management grievance or have you (or anyone you know) otherwise called it to the attention of, or discussed it with the employer or any representative thereof? <u>I don't think so.</u>		
(b) If so, please give the results thereof, including any efforts by management to eliminate or reduce the severity of the hazard <u>The supervisor says it can't be asbestos because the building is too new.</u>		
5. Please indicate your desire:  <input type="checkbox"/> I do not want my name revealed to the official in charge.  <input checked="" type="checkbox"/> My name may be revealed to the official in charge.		
WORK LOCATION	TELEPHONE NO.	DATE
<u>Technical Services Library, Bldg. 6001</u>	<u>x2345</u>	<u>20 Sep 07</u>
TYPED OR PRINTED NAME OF EMPLOYEE OR EMPLOYEE REPRESENTATIVE	SIGNATURE	
<u>Ms. H. Stokes</u>		

DA FORM 4755, OCT 1978

APD PE v2.00

**Figure H-1. Sample DA Form 4755, Employee Report of Alleged Unsafe or Unhealthful Working Conditions**



## **H-2. Employee reports of hazard**

See further guidance on DA Form 4755 and employee reports of hazard in paragraph 8-4.

## **Appendix I Installation Hazard Abatement Plan**

### **I-1. DA Form 4756**

Figure I-1, below, is a sample DA Form 4756 (Installation Hazard Abatement Plan).

<b>INSTALLATION HAZARD ABATEMENT PLAN</b>		
<small>For use of this form, see DA PAM 385-10; the proponent agency is OCSA.</small>		
1. PROJECT NO. 3-1-2b	2. DATE PREPARED 21 Sep 07	3. DATE REVISED 6 Nov 07
4. ACTIVITY/ORGANIZATION School Brigade Technical Services Library	5. HAZARD LOCATION(S) Main Section Ceiling	6. RISK ASSESSMENT CATEGORY LA (I)
7. CITATION OF SPECIFIC OSHA AND OTHER STANDARD VIOLATED 29 CFR 1910.1001(c). TB MED 513		
8. DESCRIPTION OF PROPOSED CORRECTIVE ACTION OR REMEDIAL MEASURES Revise original proposal to encapsulate ceiling material to complete removal based on cost and requirements for monitoring. All ceiling material which tests positive for asbestos content is to be removed and disposed of in accordance with the installation hazardous materials control plan.		
9a. ESTIMATED COST OF CORRECTIVE ACTION \$ 16,000.00	9b. APPROPRIATION CPA	
9c. PROGRAM ELEMENT NUMBER 362-109-ATES	9d. BUDGET COST ESTIMATED (BCE: Yes <input checked="" type="checkbox"/> No <input type="checkbox"/> )	
10. ESTIMATED ADDITIONAL OPERATING AND MAINTENANCE COSTS, IF ANY \$		
11. DESCRIPTION OF INTERIM HAZARD CONTROL MEASURES IN EFFECT Essential library operations have been moved to temporary facilities in Bldg. 5069. Equipment and materials moved into that building were thoroughly cleaned by contractors with expertise in this area. Air sampling established that detectable levels of asbestos contamination were not present in the new facility.		
12. OTHER RELEVANT INFORMATION		
13. ESTIMATED ABATEMENT COMPLETION DATE 6 Dec 07		
PREPARED BY J.C. Stokes, Safety and Occ. Health Spec.	APPROVED BY Jim Chapman, Chief, Loss Control	

DA FORM 4756, OCT 1978

APD PE v2.06

Figure I-1. Sample DA Form 4756, Installation Hazard Abatement Plan

## I-2. Instructions for completion of DA Form 4756

Instructions for completion of DA Form 4756—

*Block 1.* Obtain from Directorate of Engineering and Housing (DEH).

*Block 2.* Self-explanatory.

*Block 3.* Enter date when plan is amended.

*Block 4.* Enter name of unit, and installation which hazard was found.

*Block 5.* Enter building number and room number location.

*Block 6.* Enter risk assessment code (RAC) (chap 3).

*Block 7.* State specific OSHA, Army, or other recognized safety and occupational standards violated.

*Block 8.* Describe project details necessary to abate the hazard to an acceptable level.

*Block 9.* Self-explanatory.

*Block 10.* Self-explanatory.

*Block 11.* Explain interim measures supervisors and employees maintain until hazard is abated to an acceptable level.

*Block 12.* Include points of contact in DEH, safety office, and others as appropriate.

*Block 13.* Enter initial estimate of final abatement date; update as required.

## Appendix J

### Safety and Occupational Health Program Sub-functions/Tasks/Cost Drivers

#### J-1. Definitions and cost drivers

Table J-1, below, lists the sub-function definitions, tasks, and cost drivers for the SOH programs.

**Table J-1**

**Sub-functions definitions and cost drivers**

<b>Sub-function</b>	<b>Task</b>	<b>Cost driver</b>
<b>Program management</b>	Develop, justify, manage, plan, organize, and implement a safety program to manage compliance with statutory and regulatory standards. This sub-function includes the following programs: leader consultation, human and fiscal resources, policy, and guidance, councils, and records management.	Size of the organizations and mission and sub-programs.
<b>Education, training, and promotion</b>	Design, conduct, develop, and execute safety awareness, statutory and regulatory training, promotional and special emphasis campaigns and programs to enhance safety awareness throughout the command.	Number of training requirements/events and number and type of personnel.
<b>Mishap and near misses investigations</b>	Identify mishap casual factors and potentially unsafe practices or conditions, and recommendations for corrective actions to prevent mishap recurrence and reduce hazardous conditions. The sub-function includes the following elements: mishap screening, accident feeder reports, notifications, investigation, report reviews/coordination, report processing, mishap log, board appointments, command level reviews, countermeasure development, malfunction recording for components, OSHA recordkeeping.	Population served. Risk factors. Historical data.
<b>Sub-function</b>	<b>Task</b>	<b>Cost driver</b>
<b>Inspections, surveys, assessments, and technical consultation</b>	Establish and execute a program for the conduct of inspections, surveys and assessments of programs, projects, events, workplaces and facilities and training sites.	Level of risk (high, medium, low). Number of inspections and/or evaluations required. Number of units, facilities, events, projects supported.
<b>Hazard analysis and countermeasure</b>	Collect, review, and analyze data from various sources to identify trends, systemic deficiencies and profiles for use in establishing program initiatives and priorities. Develop, implement and manage a countermeasure program.	Risk level of operations (high, medium, low). Number of data resources (inspection results, work orders, accident investigations, QDRs, findings, and recommendations, feeder reports).

## J-2. Common Core Sub-functions and Tasks

Table J-2, below, lists the general sub-functions and tasks.

**Table J-2**

**Sub-functions and Tasks**

**Common core sub-functions/tasks**

**A. Safety and Occupational Health Program management**

Develop, justify, manage, plan, program, and validate budgets requirements for resources necessary to conduct safety activities (TDY travel, salaries, contracts, and so on).

Respond to inquiries (congressional/special interests/higher HQ, and so on).

Serve as staff advisers, technical consultants, and coordinators to the commander and staff. Provides guidance for establishing and implementing plans, policies, programs, and procedures for conducting SOH activities at all levels of command. Provides technical assistance and professional assistance to eliminate or control unsafe behavior and environments.

Review and comment on local lesson plans, regulations, and SOPs to ensure incorporation of safe techniques, tactics, practices, and procedures and application of risk management.

Maintain appropriate Army safety regulations, directives, messages, and publications in a reference library.

Develop, publish, and integrate safety policies and guidance. Develop and integrate SOH goals, programs, and evaluation criteria into command's plan.

Coordinate with U.S. Army Installation Management Agency (IMA) for necessary safety support for mission training to include maintenance and repair of unsafe conditions existing (facilities, barracks, dining and support facilities, ranges, roadways, and training areas).

Coordinate planning, MCA, and OMA project approvals and work order prosecutions.

Review, provide recommendations, and interpret SOH statutes, standards, and policies promulgated by high headquarters or other regulatory agencies.

Serve on boards, committees, and other groups pertaining to SOH as commander's representative and SME.

Establish, plan, organize, coordinate, and administer Safety and Occupational Health Council.

Plan, coordinate, organize, and administer operational safety programs in accordance with local, Army, OSHA, DOD and other applicable Federal regulations.

Establish budgets for resources necessary to conduct safety activities.

Provide direction for the SOH segment of the civilian career program development, manpower justification, training, and mentorship.

Develop MOA/support agreements (review/development).

Establish and maintain liaison with other military services, Federal and civilian agencies, and, where appropriate, host nations to ensure cooperation on matters of mutual concern.

Develop and implement tactical safety policies, procedures, and standards designed to minimize accidental losses during tactical operations and training without adversely impacting upon mission accomplishment.

Provide guidance and assistance to develop and integrate the safety requirements into tactical exercises, operations, and training.

Develop Force projection - mobilization.

Coordinate with other services to ensure safe practices and standards are incorporated in joint training exercises (JRTX) and joint readiness exercises. Participates in joint and mobilization and tactical exercises and operations.

Review plans to ensure the safety of Army personnel and the public for proposed demonstrations, exhibits, exercises, maneuvers, and contingencies.

Provide technical safety advice in planning, preparation, and execution of Army tactical operations. Participates in the planning, conduct, and debrief of exercises. Participate in related activities to include in process reviews. Ensures the incorporation of safety principles into all field training operations orders.

Review and evaluate courses of action in the decision making process and make recommendations for operations.

Participate in final acceptance inspections following construction, renovation, or modification of facilities prior to any firing on the range.

Review range modification and construction proposals, designs, and plans.

Assist the installation range control officer, PAO, and EOD officer as required in developing and implementing an on- and off-post range safety and dud awareness educational program targeted to children.

Review and assist in development of risk assessments of military training conducted on range and training areas.

Assess training conducted on all ranges.

Provide over-site for range safety matters, evaluating the effectiveness of implementing range safety tactics, technique, and procedures.

**Table J-2**  
**Sub-functions and Tasks—Continued**

---

Develop and implement range safety procedures and standards.

---

Advise and assist in developing range safety waivers and deviations.

---

Execute Army weapons/Ammunition Malfunction Investigation Program

---

Develop, plan, organize, and execute workplace safety programs to include ergonomics, hazardous communications, respiratory protection, personnel protective equipment, materials handling and storage, machinery and machine guarding, hand and portable powered tools and other hand-held equipment, electrical safety, bloodborne pathogens, confined space programs.

---

Execute and monitor workplace safety programs identified above.

---

Ensure each activity maintain MSDS.

---

Ensure hazardous materials are stored in accordance with Federal and Army standards.

---

Ensure employees are trained in wearing proper protective equipment.

---

Assist in the development of fire protection plans.

---

Assist supervisors in evaluation of proper material handling and storage.

---

Assist in development and implementation of lockout/tagout procedures for each piece of equipment .

---

Administer Child Care Development Safety Program.

---

Establish and Implement Explosive Safety Program.

---

Serve as POC for ammunition and explosive safety actions.

---

Advise and ensure safe handling of explosives, storage, and use.

---

Review site plans, safety submissions, and facility designs.

---

Review safety waivers and exemptions requests for facilities and equipment and provide the commander with essential risk data regarding the deficient situation.

---

Review MOAs with non-DOD organizations for the storage of non-DOD ammunition and explosives on the installation.

---

Implement and execute the Army Traffic safety Training Program.

---

Develop, plan, and coordinate Vehicle Safety Program to include procedures for safe operating of all Army vehicles.

---

Develop and implement POV safety program.

---

Participate and review traffic engineer studies.

---

Review and analyze feeder reports for motor vehicle accidents.

---

Develop and execute system safety programs for all procurement activities.

---

Execute the system safety program for all new construction and all renovation facilities.

---

Integration of system safety in MANPRINT.

---

Review safety releases. Review, assess, and provide recommendations for operational requirements documents.

---

Review and evaluate system training plans and integrate safety procedures.

---

Establish and Implement Radiation Safety Program.

---

Advise and ensure safe handling of radioactive material, storage, and use.

---

Maintain inventory of all radioactive materials and ensure 100 percent accountability.

---

Advise and ensure safe handling of lasers and RF systems.

---

Review site plans, safety submissions, and facility designs.

---

Designate radiation safety officer for ionizing radiation sources, lasers, and RF sources.

---

Ensure radiation safety officer is adequately trained commensurate with their duties and types of material within their program.

---

Ensure individuals working with radioactive materials or non-ionizing radiation are properly trained.

---

Establish Dosimeter Program if necessary.

---

Perform required radiation safety surveys.

---

Ensure all radiation sources are secured against unauthorized use and removal.

---

Ensure all radioactive material is authorized by a Nuclear Regulatory Commission License or Army Authorization.

---

Arrange for proper disposal of radioactive waste.

---

---

**Table J-2**  
**Sub-functions and Tasks—Continued**

---

Ensure all radiation survey instruments are functional and properly calibrated.

---

Ensure, for Army laser ranges, all type-classified or commercial class IIIb or class IV lasers received appropriate evaluation before their use?

---

Facilitate in the disposal of all unwanted military-exempt lasers and radioactive waste properly.

---

Maintain laser and RF inventory .

---

Report, promptly, all accidents and incidents involving personnel radiation exposure; or radioactive contamination of facilities, equipment, or the environment; or loss of radioactive materials through appropriate channels.

---

Ensure all personnel occupationally exposed to ionizing radiation or radioactive material above applicable levels participate in an appropriate dosimeter or bioassay program.

---

Audit subordinate radiation safety programs.

---

Manage radiation safety council meetings as required.

---

Develop and Issue Army Radiation Authorizations.

---

Investigate personnel exposures exceeding levels specified in AR 385-10 and DA Pam 385-24.

---

Ensure acquisition programs identify and arrange for NRC licensing of items, if applicable.

---

Respond to radiation incidents/accidents.

---

Perform license compliance audits.

---

Prepare NRC license applications and amendments.

---

Ensure cradle-to-grave life cycle programs are identified for all commodities containing radioactive material.

---

Ensure commercial off the shelf items comply with Army and NRC regulations.

---

Ensure transport of radioactive materials is in compliance with Federal, DOD, and Army regulations.

---

Establish and update training programs for radiation safety.

---

Ensure all personnel receive driving under the influence (DUI) training.

---

Ensure all redeploying Soldiers complete a DUI questionnaire and provide a bioassay if warranted.

---

Ensure contractors comply with all Army, DOD, and Federal regulations.

---

Issue Army radiation permits as required.

---

Plan and conduct aviation safety training.

---

**B. Inspections, surveys, assessments, and technical consultation**

---

Conduct new equipment/system assessments/evaluations (DOD/COTS) for integration of safety and risk management.

---

Monitor and integrate safety standards, tactics and techniques in recreational, sports, and Family safety programs.

---

Conduct frequent operational walk-through inspections of industrial areas.

---

Review reports of accident investigation boards for completeness, accuracy, and the appropriateness of findings and recommendations.

---

Assess workplace to ensure each individual is trained on the hazards they are exposed.

---

Conduct special general officer directed operational assessments.

---

Review and make recommendations regarding the conduct of overhead fires.

---

Schedule and execute evaluations and assessments of the commands accident prevention efforts, effectiveness of risk management, and accomplishment of command composite safety goals and objectives annually or as required.

---

Integrate safety and composite risk management assessment criteria into command and other staff evaluation and assessment programs (for example, Office of Industrial Programs, Quality Assurance, Inspector General, and so on).

---

Establish and maintain a listing of all operations and activities based on level of risk.

---

Conduct annual and special assessments of training, events, sites, facilities, ranges, airfields, sports, and recreational fields and so on, as required/directed.

---

Investigate report of unsafe and unhealthful conditions and respond with 72 hours of report with written report.

---

Review all identified hazards and assign risk assessment code. Ensure hazards are in installation master plan as priority with RAC 1 and RAC 2 corrected within 30 days. Maintain hazard list and ensure adequate forms are complete and posted in compliance with Army and Federal regulations.

---

**C. Mishap and near misses investigations**

---

---

**Table J-2**  
**Sub-functions and Tasks—Continued**

---

Collect, review, and analyze data from various sources (accident records, exposure assessments, feasibility studies, hazard probability, and severity modeling, inspections, surveys, product, and document assessments) to identify trends, systemic deficiencies, and profiles for use in establishing program initiatives and priorities.

---

Conduct accident mishaps investigations.

---

Administer an accident notification and reporting program for the command to ensure timely and accurate notification and reporting of accidents and related data.

---

Establish and manage procedures for accident reporting to ensure timely notification and reporting to comply with Army regulations.

---

Provide technical assistance in accident investigation and reporting to ensure accuracy, completeness, and timeliness.

---

Conduct investigations or support accident/incident investigation boards (internal and external) as required. Coordinate findings and recommendations with the correct proponent for corrective actions. Review, analyze, and inspect accident scene, conduct interviews, and develop written reports.

---

Establish and maintain safety Web page; provide safety information to other Web sites as appropriate.

---

Prepare, coordinate, and publish command safety awareness correspondence (holiday safety messages, safety of use messages, special emphasis memos, and so on).

---

Design, conduct, develop, and integrate CRM training in to military and civilian training.

---

#### **D. Education, training, and promotion**

---

Provide hazard recognition and abatement training specific to regulatory and statutory requirements for work site or activity.

---

Develop and execute safety promotional and special emphasis campaigns and programs to enhance safety awareness throughout the command.

---

Assist Army course proponents in the integration of safety and CRM into training products; training support packages and lesson plans for common core, leadership, and senior Army leadership courses.

---

Integrate SOH procedures into all Army training guidelines and techniques to be applied in the field.

---

Conduct required industrial safety training as required by Army, OSHA, local, and other applicable Federal regulations.

---

Distribute aviation and safety flight information.

---

Develop and integrate safety and CRM to Doctrine, Organizations, Training, Material, Leader Development, Personnel and Facilities (DOTMLPF).

---

#### **E. Hazard analysis and countermeasures**

---

Collect, analyze, and disseminate accident data concerning the experience of the command and report to commanders and subordinate elements. Develop recommendations for corrective action where warrant by adverse accident rates or trends, hazardous conditions or procedures, and other deficiencies.

---

Design, develop, conduct, and integrate safety and CRM into Leader Development and Safety Officer/NCO Training.

---

Develop, implement, and manage a countermeasure development program (develop control measures, procedures, programs, engineering, administrative, elimination, and PPE).

---

Perform critical combat task analysis to identify hazards and requisite safety standards.

---

Ensure that adequate safe practices and safe physical standards are incorporated in operating procedures, manuals, directives, and other instructions.

---

Plan and manage FOD prevention program.

---

Develop and plan pre-accident plan.

---

Develop reports for recommendation of countermeasures.

---

Review, analyze, and develop Army ground doctrinal publications.

---

#### **F. Special tasks**

---

Administer dredging safety, floating plant safety, and diving safety programs for USACE civil works employees and equipment and for contractors.

---

Serve as SMEs or competent persons for specialized safety areas as required by OSHA or command policy on USACE civil works projects (that is, dive coordinator, excavation competent person, scaffolding competent person, and so on).

---

Establish and implement a Chemical/Biological Agent Safety Program.

---

Serve as POC for chemical/biological agent safety actions (sub-task).

---

Advise and ensure safe handling of chemical/biological agent, storage and use (sub-task).

---

Review site plans, safety submissions, and facility designs for chemical/biological agent testing (sub-task).

---

---

**Table J-2**  
**Sub-functions and Tasks—Continued**

---

Review chemical/bio safety waivers and exemptions requests for facilities and equipment and provide the commander with essential risk data regarding the deficient situation (sub-task).

---

Report, promptly, all accidents and incidents involving chemical/biological agent exposure or chemical/biological agent contamination of facilities, equipment, or the environment, or loss of chemical/biological agent materials promptly reported through appropriate channels (sub-task).

---

Respond to chemical/biological agent incident/accident/exercises (sub-task).

---

Ensure transport of chemical/biological agent materials is in compliance with Federal, DOD, and Army regulations (sub-task).

---

Establish and update training programs for chemical/biological agent safety (sub task)

---

Identify, assess, control, implement, and provide risk criteria to make decisions concerning hazards and operations associated with DT/OT and test support operations.

---

Establish a Nuclear Reactor Safety Program.

---

Develop and execute a Joint Commission on Accreditation of Health Care Organizations (JCAHO) Safety Program.

---

Administer a chemical hygiene program (laboratory safety).

---

Manage the safety awards program.

---

Manage the Occupational Health/Industrial Hygiene Program.

---

Support system safety review boards (for example, fuse ignition and insensitive munitions).

---

Provide safety support during mobilization and disaster relief.

---

Provide safety support to Homeland defense activities; battle assemblies, SW border mission, civil support teams, state active duty missions.

---

Port and rail head safety (rail at garrison).

---

Contract safety reviews.

---

Administer the Industrial Hygiene Program as it relates to USACE civil works projects and MCA.

---

Review design documents and conduct assessments of environmental restoration construction projects.

---

Conduct operational walk-through inspections of industrial areas for health hazard inventory, assessment, and evaluation.

---

Review design documents, inspects, and conducts assessments of asbestos/lead construction projects.

---

Conduct ventilation studies and design review.

---

Conduct illumination studies and design review.

---

Administer the Medical Surveillance Program.

---

Administers the hearing and vision conversation programs.

---

Conduct indoor quality assessments.

---

**J-3. Installation support core sub-functions/tasks**

Table J-3, below, lists the general installation support core sub-functions and tasks.

---

**Table J-3**  
**Installation support core sub-functions/tasks**  
**Installation support**

---

Coordinate necessary safety support for mission training to include maintenance and repair of unsafe conditions existing infrastructure (facilities, barracks, dining and support facilities, ranges, roadways and training areas, and so on).

---

Review Planning, MCA, and OMA project approvals and work order prosecutions for safety.

---

Inspect and evaluate range infrastructure.

---

Administer the Child Care Development Safety Program.

---

Monitor and integrate safety standards, tactics and techniques in recreation, sports and Family safety programs.

---

Establish and implement an explosive safety program.

---

Serve as POC for ammunition and explosive safety actions.

---

Review site plans, safety submissions, and facility designs.

---



#### **J-4. Army Safety Program structure**

Core safety functions and sub-functions used in tailoring the safety organization are discussed in chapter 3.

## **Glossary**

### **Section I Abbreviations**

#### **AAA**

Army Audit Agency

#### **ABET**

Accreditation Board for Engineering and Technology

#### **ACOM**

Army Command

#### **AIBPC**

Accident Investigation Board President Course

#### **AOC**

Army Operations Center

#### **ASA (I&E)**

Assistant Secretary of the Army (Installations and Environment)

#### **ASA (M&RA)**

Assistant Secretary of the Army (Manpower and Reserve Affairs)

#### **AR**

Army regulation

#### **ARNG**

Army National Guard

#### **ASCC**

Army Service Component Commands

#### **BBP**

bloodborne pathogens

#### **BBPECP**

Bloodborne Pathogen Exposure Control Program

#### **BBPP**

Bloodborne Pathogen Program

#### **CDC**

Center for Disease Control

#### **CFR**

Code of Federated Regulations

#### **CHEMTREC**

Chemical Transportation Emergency Center

#### **CONOPS**

continuity of operations

#### **CONUS**

continental United States

#### **CPR**

cardio-pulmonary respiration

**CPAC**

Civilian Personnel Advisory Center

**CPSC**

U.S. Consumer Product Safety Commission

**CPX**

command post exercise

**CP-12**

Civilian Safety Career Program

**CRC**

Combat Readiness Center

**CRM**

composite risk management

**CSA**

Chief of Staff, Army

**DA**

Department of the Army

**DAC**

Department of the Army civilian

**DASAF**

Director of Army Safety

**DCS, G-4**

Deputy Chief of Staff, G-4

**DCS, G-3/5/7**

Deputy Chief of Staff, G-3/5/7

**DDESB**

Department of Defense Explosives Safety Board

**DMM**

discarded military munitions

**DNA**

deoxyribonucleic acid

**DOD**

Department of Defense

**DOL**

Department of Labor

**DOT**

Department of Transportation

**DRU**

Direct Reporting Units

**DUI**

driving under the influence

**ECP**

Exposure Control Plan

**EM**

engineering manual

**EOD**

explosive ordnance disposal

**EPA**

Environmental Protection Agency

**FAR**

Federal Acquisition Regulations

**FM**

field manuals

**FORSCOM**

U.S. Army Forces Command

**HBV**

Hepatitis B virus

**HIV**

human immunodeficiency virus

**HQDA**

Headquarters, Department of the Army

**IG**

Inspector General

**JHA**

job hazard analysis

**LECP**

Local Emergency Planning Committees

**MARSSIM**

multi-agency radiation survey and site investigation manual

**MOS**

military occupational specialty

**MOU**

memorandum of understanding

**MTF**

medical treatment facility

**MTOE**

modified table of organization and equipment

**MSDS**

material safety data sheets

**NAF**

non-appropriated fund

**NIH**

National Institute of Health

**NMCC**

National Military Command Center (JCS)

**NRC**

National Response Center

**NRC**

Nuclear Regulatory Commission

**NTSB**

National Transportation Safety Board

**OASA (I, L&E)**

Office of Assistant Secretary of the Army (Installations, Logistics and Environment)

**OCONUS**

outside continental United States

**OCSA**

Office of the Chief of Staff, Army

**ORM**

other regulated material

**OSD**

Office of the Secretary of Defense

**OSHA**

Occupational Safety and Health Administration

**OTJ**

on-the-job

**PFD**

personal flotation device

**POL**

petroleum, oil, and lubricants

**POV**

personally owned vehicle

**PM**

program manager

**PPE**

personal protection equipment

**SDDC**

Surface Deployment and Distribution Command

**SMA**

Sergeant Major of the Army

**SOH**

safety and occupational health

**SOP**

standard operating procedures

**SRS**

Strategic Readiness Score Card System

**SSP**

Strategic Safety Plan

**STEL**

short-term exposure list

**TDA**

table of distribution and allowance

**TEMP**

Test and Evaluation Master Plan

**TOE**

table of organization and equipment

**UA**

unit of action

**UCJM**

Unified Code of Military Justice

**UE**

unit of employment

**UFGS**

Unified Facilities Guide Specifications

**UNO**

United Nations Organization

**USAR**

U.S. Army Reserve

**USACRC**

U.S. Army Combat Readiness Center

**USACHPPM**

U.S. Army Center for Health Promotion and Preventive Medicine

**USAMC**

U.S. Air Mission Commander

**USATCES**

U.S. Army Technical Center for Explosive Safety

**UXO**

unexploded ordnance

**Section II****Terms****Accident**

Any unplanned event or series of events that result in death, injury, or illness to personnel, or damage to or loss of equipment or property. (Within the context of this regulation, accident is synonymous with mishap.)

**Active Army personnel**

Members of the Army who are on full-time duty in active military service, including cadets at the U.S. Military Academy.

**Aircraft**

Free balloons, gliders, airships, and flying machines, whether manned or unmanned, weight carrying structure for navigation of the air that is supported by its own buoyancy or the dynamic action of the air against its surfaces.

**Aircraft ground accident**

Injury or property damage accidents involving Army aircraft in which no intent for flight exists and the engine(s) is/are in operation.

**Ammunition and explosives**

Includes (but is not limited to) all items of ammunition; propellants, liquid and solid; high and low explosives; guided missiles; warheads; devices; pyrotechnics; chemical agents; and components and substances associated therewith, presenting real or potential hazards to life and property.

**Annual basis or annually**

Annual basis or annually should be from the month of the current year to the same month of the following year. However, the time will not exceed 13 months. This does not apply to items covered under the Army Maintenance Management System.

**Army accident**

An Army accident is defined as an unplanned event, or series of events, which results in one or more of the following:

- a. Occupational illness to military or Army civilian personnel.
- b. Injury to on-duty Army civilian personnel.
- c. Injury to Army military on- or off-duty.
- d. Damage to Army property.
- e. Damage to public or private property, and/or injury or illness to non-Army personnel caused by Army operations (the Army had a causal or contributing role in the accident).

**Army civilian personnel**

All DA civil service employees, including, but not limited to, ARNG and USAR technicians; foreign nationals directly or indirectly employed by DA; non-appropriated fund employees (excluding part-time military); and others as may be necessary to meet the intent of the regulation.

**Army leadership**

Army leadership refers to Army officers, NCOs, SES officials, and GS employees designated, authorized, held responsible, and accountable by the Army to make decisions at various levels of the Army involving execution of the Army's mission. Designation must be documented in writing or contained in official orders.

**Army motor vehicle**

Any vehicle that meets the following criteria:

- a. A vehicle that is owned, leased, or rented by the DA and/or Reserve components.
- b. A vehicle that is primarily designed for over-the-road operation.
- c. A vehicle whose general purpose is the transportation of cargo or personnel. Examples are passenger cars, station wagons, trucks, ambulances, buses, motorcycles, fire trucks, and refueling vehicles.

**Army National Guard personnel**

See below for ARNG personnel who are on—

- a. Active duty for training.
- b. Inactive duty training.
- c. Annual training.
- d. Active duty special work.
- e. Temporary tour active duty.
- f. Active Guard/Reserve (AGR).
- g. Full-time manning.

**Army personnel**

Active duty Army personnel, Army civilian personnel, USAR personnel, ARNG personnel, and ROTC personnel as defined in this regulation.

**Army property**

Any item of Army property, or property leased by the Army for which the Army has assumed risk of loss, such as aircraft, vehicle, building, structure, system, and so on.

**Active duty for training**

Inactive duty training.

**Annual training**

Active duty for training.

**Active duty for special work**

Active Guard/Reserve.

**Army composite risk management process**

A holistic approach to preserving readiness that applies 24/7 to Soldiers, Army civilian employees, and even contract workers. The process has five phases that form a closed loop system of risk assessment, mitigation, and evaluation.

**Audit**

A process of collecting information about an organization's SOH management system and making judgments about its adequacy and performance, identifying both the strengths and weaknesses of the safety and health program as implemented by the organization. To ensure that all necessary safety and health program elements are operating and that procedures are in place for thorough implementation. The aims of auditing should be to establish that: appropriate management arrangements are in place; an adequate CRM control system exists which both reflect the hazard profile of the organization and is properly implemented; and appropriate workplace precautions are in place.

**Barrier**

A permanent or temporary impediment to foot and or vehicular traffic that personnel are prohibited to pass without approval from range control. A barrier may be sentinel, wire fencing, gate, sign, or other access-limiting device.

**Business plan**

A comprehensive document that clearly describes how the safety office intends to obtain their strategic goals and objectives. It describes how they will execute their programs and processes, manage funding and manpower, and interface with other organizations to achieve those goals.

**Chemical agent**

A chemical compound intended for use (to include experimental compounds) in military operations to kill, seriously injure, or incapacitate persons through its physiological effects. Excluded are RDTE solutions, riot control agents, chemical defoliants and herbicides, smoke, flame and incendiaries, and industrial chemicals.

**Chemical agent operation**

Any operation that involves chemical agents, including storage, shipping, handling, manufacturing, maintenance, test chamber activities, laboratory activities, surveillance, demilitarization, decontamination, disposal, and training.

**Chemical ammunition**

Ammunition, the filler of which has the basic function of producing a toxic or irritant effect on the body, a screening or signaling smoke, or an incendiary action.

**Chemical event**

The term "chemical event" encompasses all chemical accidents, incidents, and politically/public sensitive occurrences (also see AR 50-6). Specifically, this applies to—

*a.* Confirmed releases of agent from munitions. A confirmed chemical agent release from stockpile or non-stockpile chemical weapons is any detection of agent outside the munitions body or bulk storage container into the atmosphere outside of a closed containment system that is confirmed by corroborating positive detections. Closed containment systems include filtered bunkers, igloos, or over-pack containers that are capable of preventing the escape of chemical agent in concentrations exceeding the AEL. Reporting will begin based on the time of release confirmation and must not wait until location and isolation of the leaking munitions/container is accomplished.



*b.* Discovery of an actual or suspected chemical agent munitions or container that may require emergency transportation and/or disposal. Discovery as part of planned real property remediation will not be reported as a chemical event unless emergency transportation or disposal is required, but it will be reported in accordance with remediation plans.

*c.* Confirmed detection of agent above short-term exposure limit (STEL) occurring for any period outside the primary engineering control. This includes agent operations conducted in a closed system that is contained in a facility equipped with secondary engineering controls to protect unprotected workers or the ambient environment (for example, cascade ventilation/air filtrations).

*d.* Actual exposure of personnel to agent above the STEL that is confirmed by clinical evaluation or initial laboratory evaluation or documented by sampling techniques. This includes any case where there is a reasonable belief that an exposure has occurred to any individual above these limits. Special attention needs to be given to workers reporting that they believe they were exposed to agent or the failure of personnel protective equipment.

*e.* Any terrorist or criminal act directed toward chemical agent storage, laboratory, or demilitarization facility or any deliberate release of chemical agent. This includes employment of an improvised chemical device intended to disperse chemical agent, regardless of whether the device has functioned.

*f.* Loss of chemical agent (other than deliberate destruction by approved, authorized laboratory and demilitarization processes).

*g.* Any malfunction or other significant activity at a chemical demilitarization plant that could reasonably be expected to cause concern within the local community or the press, or that, in the judgment of the facility or installation management or leadership, could cause embarrassment to the U.S. Army.

*h.* The categories above that involve items configured as weapons containing the industrial chemical chlorine, hydrogen and potassium cyanide, carbonyl chloride, cyanogen chloride, or chloropicrin. This pertains to items that were designed as a delivery/dispersal system for use in war, irrespective of fusing or explosive configuration.

### **Chemical munitions and agents**

An agent or munitions that, through its chemical properties, produces lethal or other damaging effects to human beings; this term does not include riot control agents, chemical herbicides, smoke, and other obscuration materials.

### **Chemical warfare**

All aspects of military operations involving the use of lethal munitions/agents and the warning and protective measures associated with such offensive operations.

### **Chemical Weapons System**

An integrated relationship of chemical agents, munitions or spraying devices and their mode of delivery to the target.

### **Combat developer**

Command or agency that formulates doctrine, concepts, organization, training, materiel requirements, and objectives. Represents the user community over the life cycle of the system.

### **Command responsibility**

Commanders down the entire chain of command are responsible for the safety of their personnel.

### **Commander**

An individual that lawfully exercises over subordinates by virtue of rank or assignment. This includes the authority and responsibility for effectively using available resources for planning the employment of, organizing, directing, coordinating and controlling military forces for the accomplishment of assigned missions. This also includes responsibility for health, welfare, morale, and discipline of assigned personnel in his "command." Examples of commanders are as follows:

- a.* Commander of an Army Headquarters, CONUS and OCONUS.
- b.* The Chief of Engineers (civil and military works).
- c.* Commander, U.S. Army Space and Strategic Defense Command.
- d.* The Chief, Army NGB
- e.* Commander, U.S. Army Medical Research and Development Command.
- f.* Commanders of Army installations with a full-time safety professional. This includes posts, camps, stations, and military communities.
- g.* State adjutants general (ARNG).
- h.* Commanders of USAR organizations with a full-time safety professional.
- i.* Commanders of medical treatment facilities.
- j.* Commanders in direct support of general support maintenance units.
- k.* Director of Facilities Engineering.
- l.* Provost Marshal/Law Enforcement Commander.

- m.* Director of Industrial Operations.
- n.* U.S. Army Plant Representative Office.
- o.* Commander of TOE, MTOE, or TDA organization.

**Competent authority**

An individual of the armed forces designated in command, responsible for the direction, coordination and control of military forces. The commander alone is responsible for everything his/her unit does or fails to do. He/she cannot delegate his/her responsibility or any part of it although he/she may delegate portions of his/her authority to competent individuals. An individual designated by the commander to address areas of primary interest within that individual's technical expertise.

**Composite risk**

Blends tactical, threat-based risks with accidental, hazard-based risks (U.S. Army).

**Concentration**

The amount of a chemical agent present in a unit volume of air. Usually expressed in milligrams per cubic meter (mg/m<sup>3</sup>).

**Confirmed exposure**

Any mishap with a Biological Defense Program agent in which there was direct evidence of an actual exposure such as a measurable rise in antibody titer to the agent or a confirmed diagnosis of intoxication or disease.

**Conservation**

The protection, improvement, and use of natural resources according to principles that will provide optimum public benefit and support of military operations.

**Contracting agency**

The organization that has primary responsibility for monitoring, administering, and ensuring compliance with the contract, especially pertaining to the chemical agent program.

**Counseling/advisory**

Activities associated with non-supervisory advice/assistance provided by subject matter specialists on specific topics. Examples: Alcohol/drug abuse, mental health, community services.

**Contracting officer**

A designated officer who performs administrative functions listed in the Federal Acquisition Regulation.

**Contractor accident**

An accident that occurs as a result of a Government contractor's operations in which there is damage to U.S. Government or Army property or equipment, injury, or occupational illness to Army personnel, or other reportable event.

**Control**

Action taken to eliminate hazards or reduce their risk.

**Conveyance**

A truck, tractor-trailer, railcar or commercial inter-modal container used for transportation of ammunition, explosives, or hazardous material.

**DA contractor**

A non-Federal employer engaged in performance of a DA contract, whether as prime contractor or subcontractor.

**DA installation**

A grouping of facilities located in the same vicinity that supports a particular DA functions. Installations may include locations such as posts, camps, stations, or communities, land, and improvements permanently affixed thereto which are under the DA control and used by Army organizations. Where installations are located contiguously, the combined property is designated as one installation and the separate functions as activities of that installation. In addition to those used primarily by troops, the term "installation" applies to such real properties as depots, arsenals, ammunition plants (both contractor and Government operated), hospitals, terminals, and other special mission installations.

**Decontamination**

The physical or chemical processes by which an object or area, contaminated with a harmful or potentially harmful substance (for example, chemical agent, explosives, etiologic agent, hazardous chemical, and so on) is made safe for handling or use. Such processes include physical removal of all contaminants, thermal destruction or sterilization, chemical inactivation, or a combination of these methods.

**Decontaminating material**

Any substance used to chemically destroy, physically remove, seal, or otherwise make harmless a chemical agent.

**Demilitarization**

The mutilation, destruction, or neutralization of chemical agent materiel, rendering it harmless, and ineffectual for military purposes.

**Detection**

The determination of the presence of a chemical agent.

**Educational**

Includes classroom training, excludes field settings such as FTX, maneuvers. Examples: Teach/instruct/brief/counsel student/audience activities.

**Emergency**

An event for which an individual perceives that a response is essential to prevent or reduce injury or property damage.

**Emergency disposal**

Immediate transportation and disposal of chemical agents/munitions when the senior EOD person determines the health or safety of any person is clearly endangered.

**Engineering controls**

Regulation of facility operations using prudent engineering principles, such as facility design, operation sequencing, equipment selection, and process limitations.

**Engineering or construction**

Those activities associated with surveying, building, and erecting, disassembling or destroying things. Examples: Lay/clear mine fields, bridging, quarrying, welding, brazing, roofing, installing electrical wiring, painting, land surveying, demolition, clearing, digging, concrete work, masonry work, dredging, trenching.

**Environmental factors**

Environmental conditions, which had, or could have had an adverse effect on the individual's actions or the performance of equipment.

**Explosive ordnance disposal**

The detection, identification, field evaluations, rendering safe, recovery, and final disposal of unexploded explosive ordnance or munitions chemical agents.

**Explosive ordnance disposal procedures**

Those particular courses or modes of action for access to, recovery, render safe, and final disposal of explosive ordnance, or any hazardous material associated with an EOD incident.

**Establishment**

A single physical location where business is conducted or where services or operations are performed. Where distinctly separate activities are performed at a single physical location, each activity will be treated as a separate establishment. Typically, an establishment refers to a field activity, regional office, area office, installation, or facility.

**Evaluation**

A specialized inspection designed to determine the effectiveness of a unit's safety and health program.

**Exclusive Federal jurisdiction**

(Otherwise termed 'exclusive legislative jurisdiction.) Applies to situations where the Federal Government has received, by whatever method, all the authority of the state, with no reservation made to the state, except of the right to serve process resulting from activities that occurred off the land involved.

**Experimental chemical agents**

Chemical substances being tested, developed, or altered for chemical defense purposes that—

- a.* Are used solely by the military.
- b.* Are contained in items configured as a weapon.
- c.* Have toxicities equal to or greater than current nerve or mustard agents.

**Exposure**

The frequency and length of time personnel and equipment are subjected to a hazard.

**Explosion**

A chemical reaction of any chemical compound or mechanical mixture that, when initiated, undergoes a very rapid combustion or decomposition, releasing large volumes of highly heated gases that exert pressure on the surrounding medium. Depending on the rate of energy release, an explosion can be categorized as a deflagration or a detonation.

**Explosive license**

An installation-generated document which shows the allowable net explosives weight at each explosive site.

**Exposed site**

A location exposed to the potential hazardous effects (blast, fragments, debris, and heat flux) from an explosion at a PES.

**Extremely hazardous substances**

EPA uses the term extremely hazardous substance for the chemicals that must be reported to the appropriate authorities if released above the threshold reporting quantity. Each substance has a threshold reporting quantity. The list of extremely hazardous substances is identified in Title III of Superfund Amendments and Reauthorization Act (SARA) of 1986 (40 CFR Part 355).

**Facility**

An area within a building that provides appropriate protective barriers for persons working in the facility and the environment external to the facility, and outside of the building.

**Federal Occupational Safety and Health Administration official**

Investigator or compliance officer employed by, assigned to, or under contract to OSHA.

**Field operations**

Operations conducted outdoors or outside of man-made enclosures or structures that contain built-in alarms or engineered chemical agent controls. Short-term operations in storage structures are also considered field operations.

**First aid**

Multiple applications of first aid do not represent medical treatment. It is the nature of the treatment, not how many times it is applied, as to whether it qualifies as first aid or medical treatment. Treatment may include—

- a.* Using a nonprescription medication at nonprescription strength.
- b.* Cleaning, flushing, or soaking wounds on the surface of the skin.
- c.* Using hot or cold therapy.
- d.* Using any temporary immobilization devices while transporting a victim.
- e.* Draining fluid from a blister.
- f.* Removing foreign bodies from the eye using only irrigation or a cotton swab.
- g.* Using finger guards.
- h.* Use of a massage (though physical and chiropractic therapy are defined as medical treatment).
- i.* Drinking fluids for relief of heat stress.

**Flammable**

A material that has the characteristic of being easily ignited and burning readily.

**Foreign object damage**

Damage to Army vehicle/equipment/property as a result of objects alien to the vehicle/equipment damaged. Excludes aircraft turbine engine(s) defined as a foreign object damage incident.

**Fragment**

A piece of an exploding or exploded munitions. Fragments may be complete items, subassemblies, pieces thereof, or pieces of equipment or buildings containing the items.

**Fragment distance**

The limiting range, based on a specific density of hazardous fragments, expected from the type and quantity of explosives involved. Used in establishing certain Q-D criteria. A hazardous fragment is a fragment having an impact energy of 58 foot-pounds or greater. Hazardous fragment density is a density of hazardous fragments exceeding one per 600 square feet.

**Full-time manning**

Temporary tour active duty.

**Ground accident**

Any accident exclusive of aviation (flight/flight related) (for example, AMV, ACV, POV, marine).

**Handling/material/passengers**

Activities associated with the transportation, distribution, and storage of material or passengers. Examples: Distributing/issuing, loading/unloading, transporting/moving/delivering, packing/unpacking/preserving, inventorying/inspecting, weigh/measure, palletize/slingload/rig, retrieve, turn in/store.

**Hazard**

Any actual or potential condition that can cause injury, illness, or death of personnel or damage to or loss of equipment, property or mission degradation, or a condition or activity with potential to cause damage, loss, or mission degradation.

**Hazard analysis**

A hazard analysis is a clear, systemic, concise, well-defined, orderly, consistent, closed-loop, quantitative or qualitative and objective methodology used to identify possible hazards within a mission, system, equipment or process that can cause losses to the mission, equipment, process, personnel or damage to the environment. Examples of hazard analyses are What-If, Preliminary Hazard Analysis, Sneak Circuit Analysis, Hazard and Operability Study (HAZOP), Fault Tree Analysis, Failure Mode and Effects Analysis (FMEA), and Fault Hazard Analysis.

**Hazardous chemicals**

OSHA uses the term hazardous chemical to denote any chemical that would be a risk to employees if exposed in the work place. Hazardous chemicals cover a broader group of chemicals than the other chemical lists.

**Hazard class**

The United Nations Organization (UNO) hazardous classification system, which contains nine hazard classes, is used by the DOD for dangerous materials to identify the hazardous characteristics of A&E. Hazard Class 1 (A&E) is further divided into six division designators that indicate the primary characteristics and associated hazards.

**Hazard Classification**

An assignment of ammunition and explosives (class 1 substances) into one of six divisions for purposes of storage, transportation, and QD computations. These divisions are—

- a. 1.1 - mass detonating.
- b. 1.2 - fragment producing.
- c. 1.3 - mass fire.
- d. 1.4 - moderate fire.
- e. 1.5 - very insensitive explosives and blasting agent (used by the Army for transportation only).
- f. 1.6 - extremely insensitive ammunition.

**Hazardous materials**

a. "Hazardous material" means any material that has been designated as hazardous under 49 United States Code, Sections 5101 to 5127 (2003) and is required to be placarded under 49 CFR 172, Subpart F or any quantity of material listed as a select agent or toxin in 42 CFR 73 (2003, c. 434, §3 (amd); §37 (aff)).

b. Substances that have hazardous characteristics such as flammable, corrosive, reactive, toxic, radioactive, poisonous, carcinogenic or infectious, having properties capable of producing adverse effects on the health and safety or the environment of a human being. Legal definitions are found in individual regulations.

c. Any substance or material that when involved in an accident and released in sufficient quantities, poses a risk to people's health, safety, and/or property. These substances and materials include explosives, radioactive materials,

flammable liquids or solids, combustible liquids or solids, poisons, oxidizers, toxins, and corrosive materials (FEMA definition).

*d.* The United States Department of Transportation (DOT) uses the term hazardous materials which covers eight hazard classes, some of which have subcategories called classifications and a ninth class covering other regulated materials (ORM). DOT includes in its regulations hazardous substances and hazardous wastes as ORM-E, both of which are regulated by the U.S. Environmental Protection Agency (EPA), if their inherent properties would not otherwise be covered.

### **Hazardous substances**

Two forms of definitions—

*a.* EPA uses the term hazardous substance for the chemicals that, if released into the environment above a certain amount, must be reported and depending on the threat to the environment, Federal involvement in handling the incident can be authorized. A list of the hazardous substances is published in 40 CFR 302, Table 302.4.

*b.* OSHA uses the term hazardous substance in 29 CFR 1910.120, which resulted from Title I of SARA and covers emergency response. OSHA uses the term differently than EPA. Hazardous substances, as used by OSHA, cover every chemical regulated by both DOT and EPA.

### **Hazardous wastes**

EPA uses the term hazardous wastes for chemicals that are regulated under the Resource, Conservation and Recovery Act. Hazardous wastes in transportation is regulated by DOT.

### **Hazardous chemicals**

OSHA uses the term hazardous chemical to denote any chemical that would be a risk to employees if exposed in the work place. Hazardous chemicals cover a broader group of chemicals than the other chemical lists.

### **Health hazard**

An existing or likely condition, inherent to the operation, maintenance, storage or disposal of materiel or a facility, that can cause death, injury, acute or chronic illness, disability, or reduced job performance.

### **Health hazard assessment**

The applications of biomedical and psychological knowledge and principles to identify, evaluate, and control the risk to the health and effectiveness of personnel who test, use, or service Army systems.

### **Hospitalization**

Admission to a hospital as an inpatient for medical treatment.

### **Human error**

Human performance that deviated from that required by the operational standards or situation. Human error in accidents can be attributed to a system inadequacy/root cause in training, standard, leader, individual, or support failure indicated by human factors and/or human factors engineering.

### **Human factors**

Human interactions (man, machine, and/or environment) in a sequence of events that were influenced by, or the lack of human activity, which resulted or could result in an Army accident.

### **Human factors engineering**

A comprehensive technical effort to integrate into Army doctrine, materiel development, and materiel acquisition (to ensure operational effectiveness) all relevant information on—

- a.* Human characteristics.
- b.* Skill capabilities.
- c.* Performance.
- d.* Anthropometric data.
- e.* biomedical factors.
- f.* Safety factors.
- g.* Training.
- h.* Manning implications.

**Imminent danger**

Conditions or practices in any workplace that pose a danger that reasonably could be expected to cause death or severe physical hardship before the imminence of such danger could be eliminated through normal procedures.

**Improved conventional munitions**

Munitions characterized by the delivery of two or more antipersonnel, anti-materiel, and/or anti-armor sub-munitions.

**Inspection**

Comprehensive survey of all or part of a workplace in order to detect safety and health hazards. Inspections are normally performed during the regular work hours of the agency, except as special circumstances may require. Inspections do not include routine, day-to-day visits by agency occupational safety and health personnel, or routine workplace surveillance.

**Independent evaluation**

The process used by the independent evaluators to independently determine if the system satisfies the approved requirements. It will render an assessment of data from all sources, simulation and modeling, and an engineering or operational analysis to evaluate the adequacy and capability of the system.

**Independent safety assessment**

That document prepared by the USACRC and forwarded to the AAE assessing the risk of the residual hazards in a system prior to the MDRs.

**Individual risk**

Risk to a single exposed person.

**Industrial chemical**

Chemicals developed or manufactured for use in industrial operations or research by industry, Government, or academia. Man does not primarily manufacture these chemicals for the specific purpose of producing human casualties or rendering equipment, facilities, or areas dangerous for use.

**Inherent hazard**

An existing or permanent hazard (for example, voltage).

**Injury**

A traumatic wound or other condition of the body caused by external force, including stress or strain. The injury is identifiable as to time and place of occurrence and member or function of the body affected, and is caused by a specific event, incident, or series of events or incidents within a single day or work shift.

**Inspection**

Comprehensive survey of all or part of a workplace in order to detect safety and health hazards. Inspections are normally performed during the regular work hours of the agency, except as special circumstances may require. Inspections do not include routine, day-to-day visits by agency occupational safety and health personnel, or routine workplace surveillance. It is also the process of determining compliance with safety and health standards through formal and informal surveys of workplaces, operations, and facilities.

**Installation**

An aggregation of contiguous or near contiguous, common mission supporting real property holdings under the jurisdiction of the DOD within and outside the continental United States. Examples include, but are not limited to, posts, camps, bases, and stations.

**Installation-level safety director**

The senior full-time safety professional responsible for providing safety support to Army installations, including camps, stations, military communities, and USAR organizations.

**Investigation**

A systematic study of an accident, incident, injury, or occupational illness circumstances.

**Laboratory**

An individual room or rooms within a facility that provides space in which work with etiologic or chemical agents may be performed. It contains appropriate engineering features and equipment required for either a given biosafety level or

chemical agent to protect personnel working in the laboratory and the environment and personnel outside of the laboratory.

**Laser**

A device capable of producing a narrow beam of intense light (LASER-light amplification by stimulated emission of radiation).

**Life cycle**

The life of a system from conception to disposal.

**Maintenance/repair/servicing**

Activities associated with the maintenance, repair or servicing of equipment and other property. Excludes janitorial, housekeeping or grounds-keeping activities. Examples: Install/remove/modify equipment, tune/adjust/align/connect, hot-metal work, cold-metal work, plastic working, soldering, repairing tires, inspecting tires/batteries, fueling/defueling, changing/inflating tires, charging batteries.

**Malfunction**

Failure of an ammunition item to function as expected when fired, launched, or when explosive items function under conditions that should not cause functioning. Malfunctions include hang-fires, misfires, duds, abnormal functioning, and premature functioning of explosive items under normal handling, maintenance, storage, transportation, and tactical deployment. Malfunctions do not include accidents or incidents that arise solely from negligence, all practice, or situations such as vehicle accidents or fires.

**Materiel developer**

Command or agency responsible for the functional support for the research, development, and acquisition process.

**Materiel factors**

When materiel elements become inadequate or counter-productive to the operation of the vehicle/equipment/system.

**Medical surveillance**

A program composed of pre-placement, job transfer, periodic, and termination examinations that are provided to all personnel potentially exposed to chemical agent health hazards in the work environment.

**Medical Treatment**

Medical treatment is the management and care of a patient to combat disease or disorder. It does not include—

- a. Visits to a physician or licensed health care professional solely for observation or counseling.
- b. Diagnostic procedures.
- c. First aid.

**Military personnel**

All Soldiers; that is, U.S. Army active duty personnel; USAR or ARNG personnel on active duty or full-time National Guard duty or in a paid drill status; Service Academy midshipmen/cadets; Reserve Officer Training Corps cadets when engaged in directed training activities; foreign national military personnel assigned to DA; and members of other United States uniformed services assigned to DA.

**Military unique equipment, systems, and operations**

The term “uniquely military equipment, systems, and operations” excludes the design of DOD equipment and systems that are unique to the national defense mission, such as military aircraft, ships, submarines, missiles, and missile sites, early warning systems, military space systems, artillery, tanks, and tactical vehicles; and excludes operations that are uniquely military such as field maneuvers, naval operations, military flight operations, associated research test and development activities, and actions required under emergency conditions. The term includes within the scope of the order DOD workplaces and operations comparable to those of industry in the private sector such as vessel, aircraft, and vehicle repair, overhaul, and modification (except for equipment trials); construction; supply services; civil engineering or public works; medical services; and office work.

**Mishap risk management**

A component of CRM used to identify, evaluate, manage and prevent accidents to personnel, equipment, and the environment during peacetime, contingency operations and wartime due to safety and occupational health factors, design and construction of equipment, and other mishap factors.



**Mission**

Flight or series of flights (sorties), conducted to accomplish a specific task or series of tasks in support of the unit's approved mission statement. Each mission is assigned to a designated pilot in command and/or air mission commander (USAMC).

**Monitoring**

The continued or periodic act of seeking to determine whether a chemical agent is present.

**Munitions and explosives of concern**

This term, which distinguishes specific categories of military munitions that may pose unique explosives safety risks means—

- a. Unexploded ordnance (UXO).
- b. Discarded military munitions (DMM).
- c. Munitions constituents (for example, TNT, RDX) present in high enough concentrations to pose an explosive hazard.

**Munitions response**

Response actions, including investigation, removal actions and remedial actions to address the explosives safety, human health, or environmental risks presented by UXO, DMM, or munitions constituents.

**Near miss**

A potentially serious accident or incident that could have resulted in personal injury, death, or property damage, damage to the environment, and/or illness but did not occur due to one or more factors.

**Neutralization**

The act of altering the chemical, physical, and toxicological properties to render the chemical agent ineffective for use as intended.

**Non-appropriated fund employees**

Employees paid from non-appropriated funds, including summer and winter hires and special non-appropriated fund (NAF) program employees. Military personnel working part-time in NAF employment are excluded.

**Non-DOD component**

Any entity (Government, private, or corporate) that is not a part of the DOD.

**Nuclear weapon**

A device in which the explosion results from the energy released by reactions involving atomic nuclei, either fission, fusion, or both. For the purpose of this regulation, nuclear components of weapons are also included.

**Occupational hazard**

Conditions, procedures, and practices directly related to the work environment that creates a potential for producing occupational injuries or illnesses.

**Occupational illness**

Non-traumatic physiological harm or loss of capacity produced by systemic infection; continued or repeated stress or strain (for example, exposure to toxins, poisons, fumes; or other continued and repeated exposures to conditions of the work environment over a long period of time). Includes any abnormal physical or psychological condition or disorder resulting from an injury, caused by long or short-term exposure to chemical, biological, or physical agents associated with the occupational environment. For practical purposes, an occupational illness is any reported condition that does not meet the definition of an injury.

**Occupational injury**

A wound or other condition of the body caused by external force, including stress or strain. The injury is identifiable as to time and place of the occurrence and a member or function of the body affected, and is caused by a specific event, incident, or series of events or incidents within a single day or work shift.

**Off-duty**

Army personnel are off-duty when they—

- a. Are not in an on-duty status, whether on or off Army installations.
- b. Have departed official duty station, temporary duty station, or ship at termination of normal work schedule.
- c. Are on leave and/or liberty.

- d. Are traveling before and after official duties, such as driving to and from work
- e. Are participating in voluntary and/or installation team sports.
- f. Are on permissive (no cost to Government other than pay) temporary duty.
- g. Are on lunch or other rest break engaged in activities unrelated to eating or resting.

**Officer in charge**

The officer, warrant officer, or noncommissioned officer responsible for personnel conducting firing or operations within the training complex.

**On-duty**

Army personnel are considered on-duty, for purposes of accidents, when they are—

- a. Physically present at any location where they are to perform their officially assigned work. (This includes those activities incident to normal work activities that occur on Army installations, such as lunch, coffee, or rest breaks, and all activities aboard vessels.)
- b. Being transported by DOD or commercial conveyance for the purpose of performing officially assigned work. (This includes reimbursable travel in POVs for performing TDY, but not routine travel to and from work.)
- c. Participants in compulsory physical training activities (including compulsory sports) or other installation events.

**Operating vehicle or vessel**

Activities associated with operating vehicles or vessels under power. Examples: Driving, convoying/road marching, towing/pushing, mowing, hauling/transporting, driver testing, flying, vehicle road testing.

**Operational control**

Operational control is the authority to perform those functions of command over subordinate forces involving organizing and employing command and forces, assigning tasks, designating objectives, and giving authoritative direction necessary to accomplish the mission. Operational control includes authoritative direction over all aspects of military operations and joint training necessary to accomplish missions assigned to the command. It does not, in and of itself, include authoritative direction for logistics or matters of administration, discipline, internal organization, or unit training.

**Over-the road**

Operation or driving on paved roads/highways.

**Physical training**

Body conditioning or confidence building activities, excludes combat skills development. Examples: Confidence courses, combat football, combat basketball, push-ball, marches, calisthenics, pugil stick, running/jogging, PT test.

**Probability**

Probability is the qualitative or quantitative likelihood of a particular event or sequence of actions initiated by a hazard-related cause resulting in the maximum credible loss. The probability can be expressed as the product of the incident rate and mishap set likelihood.

**Project-product manager**

Individual chartered to conduct business on behalf of the Army who reports to and receives direction from either a professional employer organization, the affirmative action employer, or other materiel developer and is responsible for the centralized management of a specified acquisition program.

**Prophylaxis**

Measures designed to preserve health.

**Quality assurance specialist (ammunition surveillance)**

DA Civilian personnel in the grade of GS-09 or above who have received 2 years of ammunition training and are qualified to assist in performing malfunction investigations.

**Qualified safety and health personnel**

Includes persons who meet Office of Personnel Management standards for Safety and Occupational Health Manager/Specialist, GS-018, and Safety Engineer, GS/GM-803. Other job specialties will provide support in their respective specialty areas (for example, Safety Engineering Technician, GS-802; Safety Technician, GS-019; Aviation Safety Officer, GS-1825; Air Safety Investigating Officer, GS-1815; Fire Protection Engineer, GS-804; Fire Protection Specialist/Marshal, GS-081; Medical Officer, GS-602; Health Physicist, GS-1306; Industrial Hygienist, GS-690;

Occupational Health Nurse, GS-610; Environmental Health Technician, GS-699; or other personnel determined to be equally qualified as compared to the above Office of Personnel Management standards.

### **Quantity/distance**

The quantity of explosives material and distance separation relationships that provide defined types of protection.

### **Recommendations**

Those actions advocated to the command to correct system inadequacies that caused, contributed, could cause or contribute to an Army accident. Also referred to in this regulation as corrective action, remedial measures and/or countermeasures.

### **Recordable accident**

Injuries or occupational illnesses that result in—

- a.* Death.
- b.* Days away from work.
- c.* Restricted work activity.
- d.* Transfer to another job.
- e.* Medical treatment beyond first aid.
- f.* Loss of consciousness.
- g.* Significant injury or illness diagnosed by a physician or licensed health care professional.
- h.* Needlestick injuries and cuts from sharps that are contaminated with another person's blood or other potentially infectious material.
- i.* Medical removal under medical surveillance requirements of an OSHA standard.
- j.* Occupational hearing loss if the employee has experienced a work-related standard threshold shift (sts) in one, or both ears and the employee's total hearing level is 25 db or more about audiometric zero in same ear(s) as the sts, work-related tuberculosis cases.

### **Residual hazards**

Hazards that are not eliminated by design.

### **Restricted work activity**

Individual's injury is such that they are unable to perform their normal duties (for example, light duty).

### **Restricted area**

Any area, usually fenced, at an establishment where the entrance and egress of personnel and vehicular traffic are controlled for reasons of safety and/or security.

### **Risk**

Risk is directly related to the ignorance or uncertainty of the consequences of any proposed action. Risk is an expression of possible loss in terms of hazard severity and hazard probability. Risk is the expected value of loss associated with a loss caused by a hazard expressed in dollars. The risk associated with this loss is mathematically derived by multiplying the probability of the loss's likelihood of occurrence by the probable dollar loss associated with the loss's severity. Note: Risk has two dimensions, likelihood and magnitude, while a hazard has only one, varied magnitude.

### **Risk acceptability**

Risk acceptability is that level of risk which has been determined as tolerable in order to fulfill mission requirements. It represents a level of risk where either the output of resources to rectify safety deficiencies does not result in a proportional increase in the level of safety to be provided; or so restricts the performance that the assigned mission cannot be executed.

### **Risk acceptance**

Risk acceptance is a formal and documented process indicating Army leadership understands the hazard, its associated cause and the probable consequences to mission, personnel, equipment, public and/or the environment and that they have determined that the total risk is acceptable because of mission execution. Risk acceptance is an Army leadership prerogative.

### **Risk assessment**

An evaluation of a risk in terms of loss should a hazard result in an accident and against the benefits to be gained from accepting the risk.

**Risk acceptance level**

Risk acceptance levels are used to denote the level of risk a particular level of Army leadership and management may accept. These levels are based on the magnitude of the risk involved and the duration of the risk acceptance.

**Risk decision**

The decision to accept or not accept the risk(s) associated with an action; made by the commander, leader, or individual responsible for performing that action and having the appropriate resources to control or eliminate the risk's associated hazard.

**Rocket**

A motor which derives its thrust from ejection of hot gases generated from propellants carried within the motor casing.

**Safety**

Freedom from those conditions that can cause death, injury, occupational illness, or damage to, or loss of, equipment or property.

**Safety assessment report**

A formal, comprehensive safety report summarizing the safety data that has been collected and evaluated during the life cycle before a test of an item. It expresses the considered judgment of the developing agency on the hazard potential of the item, and any actions or precautions that are recommended to minimize these hazards and to reduce the exposure of personnel and equipment to them.

**Safety certification program**

A program established and maintained by the battalion/squadron commander to ensure that personnel under their command designated as OICs and RSOs are competent and qualified to carry out the responsibilities and duties of the respective positions.

**Safety controls**

Mandatory procedural safeguards approved by the Secretary of the Army and determined to be necessary per safety studies and reviews. Safety controls ensure maximum safety of chemical agents throughout the life of the chemical weapon. Controls will be consistent with operational requirements.

**Safety objectives**

Criteria for comparing and judging measures for adequacy. Safety objectives incorporate the safest measures consistent with operational requirements.

**Safety release**

A formal document issued to any user or technical test organization before any hands-on training, use, or maintenance by troops. The safety release is a stand-alone document which indicates the system is safe for use and maintenance by typical user troops and describes the specific hazards of the system or item based on test results, inspections, and system safety analyses. Operational limits and precautions are included. The test agency uses the data to integrate safety into test controls and procedures and to determine if the test objectives can be met within these limits. A limited safety release is issued on one particular system (Bradley Fighting Vehicle, Serial No. XXXXX). A conditional safety release is issued when further safety data are pending (for example, completion of further testing or a certain safety test) and restricts a certain aspect of the test.

**Security/law enforcement**

Activities associated with MP, CID, and other military or civilian personnel performing security or law enforcement rescue duties. Examples: Traffic safety, investigating, apprehending suspects, guarding/patrolling, controlling disturbances, intelligence activities.

**Self/buddy aid**

Administration of a chemical agent antidote to one's self or to a co-worker upon experiencing early symptoms of chemical agent poisoning.

**Severity**

Severity is a qualitative or quantitative assessment of the degree of injury, occupational illness, property, facility or environmental damage associated with the maximum credible loss. Severity is dependent only on the maximum credible loss. Once established for a maximum credible loss, it does not change only the probability of a maximum credible loss can be reduced.

**Significant risk**

A risk associated with a particular hazard where the hazard likelihood of occurrence and its potential impact on the mission, person, equipment or facility is such that it can be reasonably expected to cause bodily harm, damage to equipment or the facility or delay in the execution of the mission unless corrected. Normally, they are assigned a risk assessment code of 1, 2, or 3.

**Single-hazard risk**

Risk associated with a single hazard of the system. Single-hazard risks are characterized by consequence/probability pairs (these risks are typically classified by RAC matrix cells).

**Single hearing protector (or protection)**

Wearing either earplugs or noise muffs or noise attenuating helmets.

**Soldiering**

Noncombat activities peculiar to military life, includes receiving instruction/training in such activities, excludes classroom training. Examples: Marching, police call, formation, barracks detail, field sanitation.

**Special hazards areas**

Areas identified containing hazards which due to their nature could not be eliminated through design selection and therefore depend upon training, procedures and PPE for control of the hazards to tolerable levels. Examples are paint booths, kitchens, machine shops, areas around conveyor belts, hazardous chemical storage areas, and so on.

**Sports**

Includes activities associated with sports, regardless of whether the participation is on duty or off duty, Army-supervised or unsupervised, excludes hobbies. Examples: Racquetball/ paddleball, handball, softball, tennis, soccer, baseball, basketball, football, volleyball, skiing, swimming, scuba diving, golf, boating, hunting, fishing, martial arts, canoeing.

**Standards failure**

Standards/procedures not clear or practical, or do not exist.

**Supervisory**

Activities associated with the management of personnel. Examples: Inspection tasks, directing workloads/work crews, monitoring work, crews, planning unit activities.

**Surveillance**

The observation, inspection, investigation, test, study, and classification of ammunition, ammunition components, and explosives in movement, storage, and use with respect to degree of serviceability and rate of deterioration.

**Support failure**

Inadequate equipment/facilities/services in type, design, availability, or condition, or insufficient number/type of personnel, which influenced human error, resulting in an Army accident.

**System**

A composite, at any level of complexity, of trained personnel, procedures, materials, tools, equipment, facilities, and software. The elements of this composite entity are used together in the intended operational or support environment to perform a given task or achieve a specific production, support, or mission requirement.

**System inadequacy**

A tangible or intangible element that did not operate to standards, resulting in human error or materiel failure. Also referred to as causes, readiness shortcomings and/or root causes.

**System safety**

The application of engineering and management principles, criteria, and techniques to optimize safety within the constraints of operational effectiveness, time, and cost throughout all phases of the systems', equipment's, or facilities' life cycle.

**System safety engineering**

An engineering discipline requiring specialized professional knowledge and skills in applying scientific and engineering principles, criteria, and techniques to identify and eliminate hazards or reduce the risk associated with the hazards.

**System safety lessons learned**

A collection of real or potential safety or health-related problems based on data analysis or experience that can be applied to future and current systems to prevent similar recurrences.

**System safety management**

An element of management that defines the system safety program requirements and ensures the planning, implementation, and accomplishment of system safety tasks and activities consistent with the overall program requirements.

**System Safety Management Plan**

A management plan that defines the system safety program requirements of the Government. It ensures the planning, implementation and accomplishment of system safety tasks and activities consistent with the overall program requirements.

**System Safety Program Plan**

A description of planned methods to be used by the contractor to implement the tailored requirements of MIL-STD-882, including organizational responsibilities, resources, method of accomplishment, milestones, depth of effort, and integration with other program engineering and management activities and related systems.

**System safety risk assessment**

A document that provides a comprehensive evaluation of the safety risk being assumed for the system under consideration at the milestone decision review.

**System safety working group**

A group, chartered by the program manager, to provide program management with system safety expertise and to ensure communication among all participants.

**Tactical facilities**

Prepared locations with an assigned combat mission, such as missile launch facilities, alert aircraft parking areas, or fixed gun positions.

**Technical tests**

A generic term for testing which gathers technical data during the conduct of development testing, technical feasibility testing, qualification testing, joint development testing, and contractor or foreign testing.

**Test agency**

An organization that conducts development tests or user tests.

**Test/study/experiments**

Activities associated with the conduct of tests, studies, and experiments on natural or man-made materiel or on human beings or animals for research projects. Examples: preparing for test/study/experiment, performing test/study/experiment.

**Tolerable risk**

The level of risk associated with a specific hazard below which a hazard does not warrant any expenditure of resources to mitigate. From a legal standpoint it would be considered as a “de minimis” risk, from the Latin phrase, “de minimis noncurat lex,” meaning “the law does not concern itself with trifles.”

**Toxic chemicals**

EPA uses the term “toxic chemical” for chemicals whose total emissions or releases must be reported annually by owners and operators of certain facilities that manufacture, process, or otherwise use a listed toxic chemical. The list of toxic chemicals is identified in Title III of SARA.

**Training related death**

A death associated with a non-combat military exercise or training activity that is designed to develop a military member’s physical ability or to maintain or increase individual/collective combat and/or peacekeeping skills, and is due to either an accident or the result of natural causes occurring during or within one hour after any training activity where the exercise or activity could be a contributing factor. This does not apply to Army civilians participating in a Wellness Program.

**Unexploded ordnance**

Ammunition and explosives that have been primed, fused, armed, or otherwise prepared for action and that have been

fired, dropped, launched, projected, or placed in such a manner as to constitute a hazard to operations, installations, personnel, or materiel, and remain unexploded by malfunction, by design, or for any other cause. UXO is synonymous for the dud.

### **U.S. Army Reserve personnel**

Army Reserve Personnel members who are on—

- a. Active duty for training.
- b. Inactive duty training.
- c. Annual training.
- d. Active duty special work.
- e. Temporary tour active duty.
- f. Active Guard/Reserve (AGR).
- g. Full-time manning.

### **User test**

A generic term that encompasses testing requiring the use of user representative user troops and units for early user test and experimentation, force development test and experimentation, innovative tests, concept evaluation program tests, training effectiveness analysis tests, initial operational test and evaluation, follow-on operational test and evaluation, and joint user tests.

### **Volunteers**

Individuals who serve as unpaid assistants to facilitate the commander's ability to provide comprehensive, coordinated, and responsive services that support the readiness of Soldiers, Army civilians employees and their Families by maximizing technology and resources, adapting resources to unique installation requirements, eliminating duplication in service delivery, and increasing service effectiveness. An installation can have many types of volunteers, with each having specific guidelines that govern its management: statutory volunteers; individuals providing gratuitous service; volunteers for private organizations, and student interns.

### **Workplace**

A place (whether or not within or forming part of a building, structure, or vehicle) where any person is to work, is working, for the time being works, or customarily works, for gain or reward; and in relation to an employee, includes a place, or part of a place, under the control of the employer (not being domestic accommodation provided for the employee).

### **Work-related injuries**

Injuries or occupational illnesses incurred while performing duties in an on-duty status.

### **Worst single-hazard risk**

Consequence/probability pair representing the highest system risk.

## **Section III**

### **Special Abbreviations and Terms**

This section contains no entries.

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