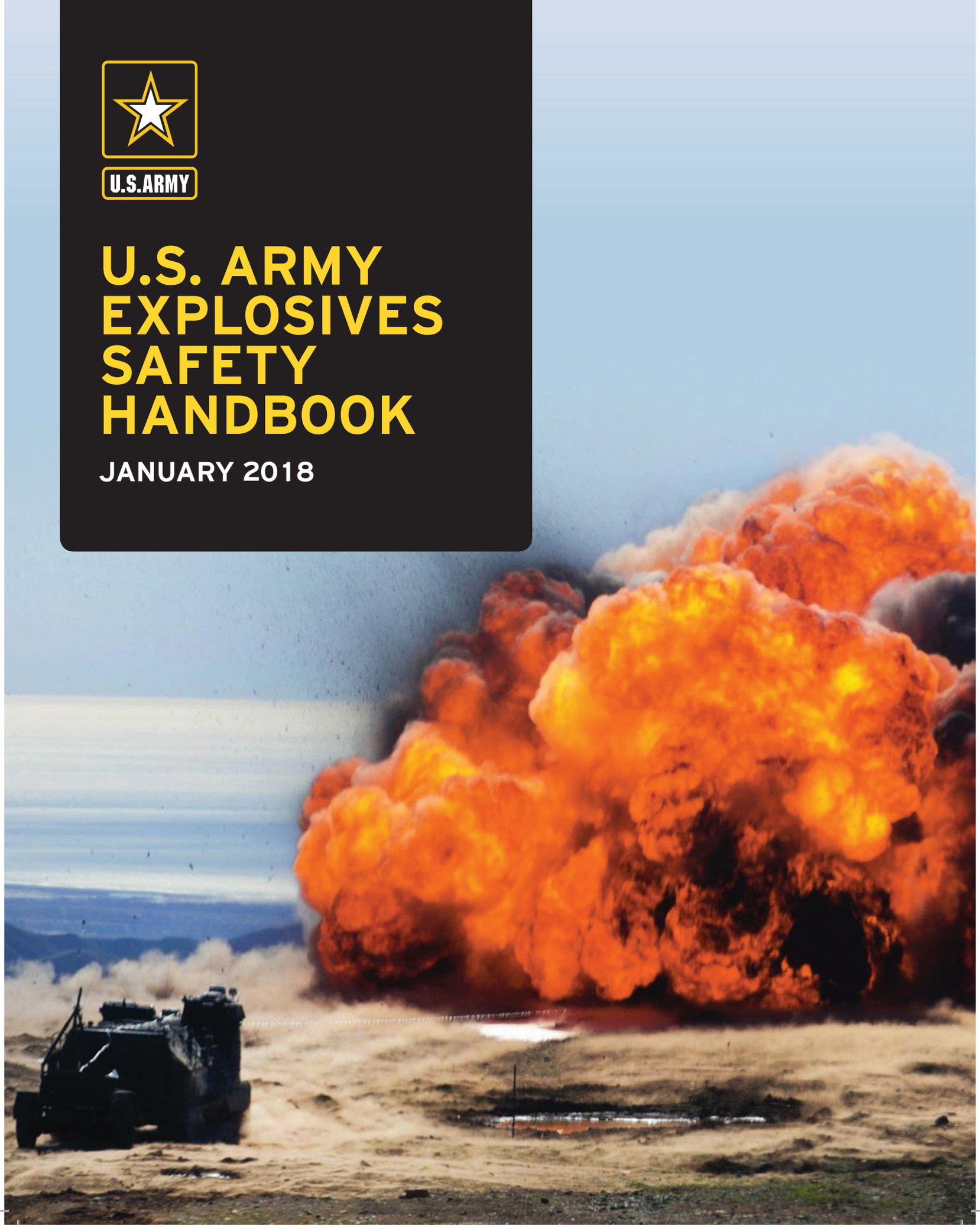
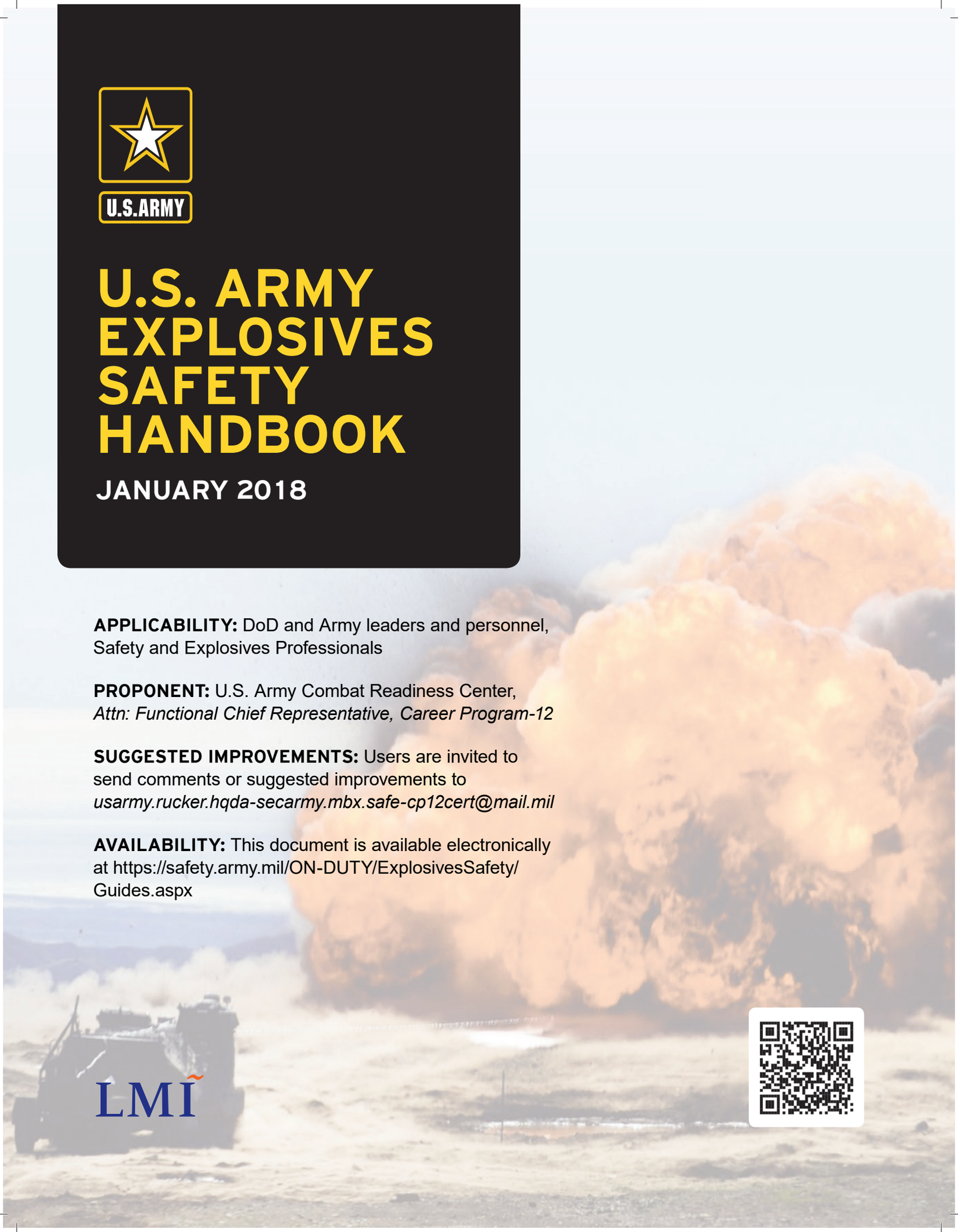
U.S.ARMY

U.S. ARMY EXPLOSIVES SAFETY HANDBOOK

JANUARY 2018





U.S. ARMY EXPLOSIVES SAFETY HANDBOOK

JANUARY 2018

APPLICABILITY: DoD and Army leaders and personnel, Safety and Explosives Professionals

PROPONENT: U.S. Army Combat Readiness Center, *Attn: Functional Chief Representative, Career Program-12*

SUGGESTED IMPROVEMENTS: Users are invited to send comments or suggested improvements to *usarmy.rucker.hqda-secarmy.mbx.safe-cp12cert@mail.mil*

AVAILABILITY: This document is available electronically at https://safety.army.mil/ON-DUTY/ExplosivesSafety/Guides.aspx

LMI

U.S. ARMY COMBAT READINESS CENTER

FOREWORD

Our Army must remain prepared to fight anywhere, anytime, and under all conditions. Mishaps involving ammunition and explosives can severely impact Army readiness by loss of life, equipment, or infrastructure. Throughout the munitions life cycle, Army safety professionals ensure these lethal commodities are produced, transported, handled, stored, employed, and disposed of in a safe and accountable manner. Accomplishing this complex safety mission requires highly trained and disciplined professionals with specialized knowledge, skills, and abilities, explosives safety risk management tools, and ready access to data and information. The Army Explosives Safety Handbook is a critical resource in meeting those challenges.

This handbook provides a ready reference for Army explosives safety responsibilities, technical competencies, training requirements, credentialing programs, and support tools. I encourage all Army safety professionals, especially those with explosives safety missions, to become familiar with this valuable resource and pursue explosives safety certificates at the appropriate levels commensurate with their explosives safety responsibilities.

I welcome your feedback on how we can better support Army leaders and safety professionals in this critical mission area.

Readiness Through Safety!

David J. Francis
Brigadier General, U.S. Army
Commanding

CARDINAL RULE OF EXPLOSIVES SAFETY

Expose the ***minimum*** number of people to the ***minimum*** quantity of explosives for the ***minimum*** period of time. This provides the ***maximum*** protection possible to people and property.

1 INTRODUCTION

PURPOSE » 1-1

HANDBOOK STRUCTURE » 1-2

2 EXPLOSIVES SAFETY RESPONSIBILITIES

INTRODUCTION » 2-1

SENIOR COMMANDERS RESPONSIBILITIES (SC) » 2-2

ARMY SAFETY AND OCCUPATIONAL HEALTH (SOH) EXPLOSIVES SAFETY RESPONSIBILITIES » 2-3

QUALITY ASSURANCE SPECIALIST—AMMUNITION SURVEILLANCE (QASAS) RESPONSIBILITIES » 2-8

AMMUNITION MANAGER (AM) RESPONSIBILITIES » 2-10

AMMUNITION WARRANT OFFICER (AWO) RESPONSIBILITIES » 2-12

AVIATION SAFETY OFFICER (ASO) RESPONSIBILITIES » 2-13

3 CP-12 EXPLOSIVES SAFETY TECHNICAL COMPETENCY MODEL

PURPOSE » 3-1

CP-12 ES RESPONSIBILITIES » 3-1

TECHNICAL COMPETENCY AREAS » 3-2

CAREER SPAN IMPLICATIONS » 3-3

TECHNICAL COMPETENCY MODEL TABLES » 3-4

ESMP Management » 3-5

AE Materials » 3-8

AE Transportation » 3-12

AE Storage » 3-15

Electrical Safety » 3-18

AE Accidents and Incidents » 3-21

Emergency Response » 3-24
Master Planning » 3-27
ESQD Site Planning » 3-29
Risk Management (RM) » 3-32
Demilitarization (Demil) » 3-35
Tactical/Deployed ES » 3-37
Industrial and RDT&E AE » 3-39

4 EXPLOSIVES SAFETY CERTIFICATE PROGRAM

PROGRAM SCOPE » 4-1
Level 1 » 4-1
Level 2 » 4-2
BENEFITS » 4-2
TRAINING REQUIREMENTS » 4-3
ES Level 1 Certificate Program » 4-3
ES Level 2 Certificate Program » 4-4
ELIGIBILITY REQUIREMENTS » 4-6
ES Level 1 Certificate Eligibility » 4-6
ES Level 2 Certificate Eligibility » 4-7
APPLICATION PROCEDURES » 4-8
ES Level 1 Certificate Procedures » 4-8
ES Level 2 Certificate Procedures » 4-10

5 OTHER SPECIALIZED ES TRAINING

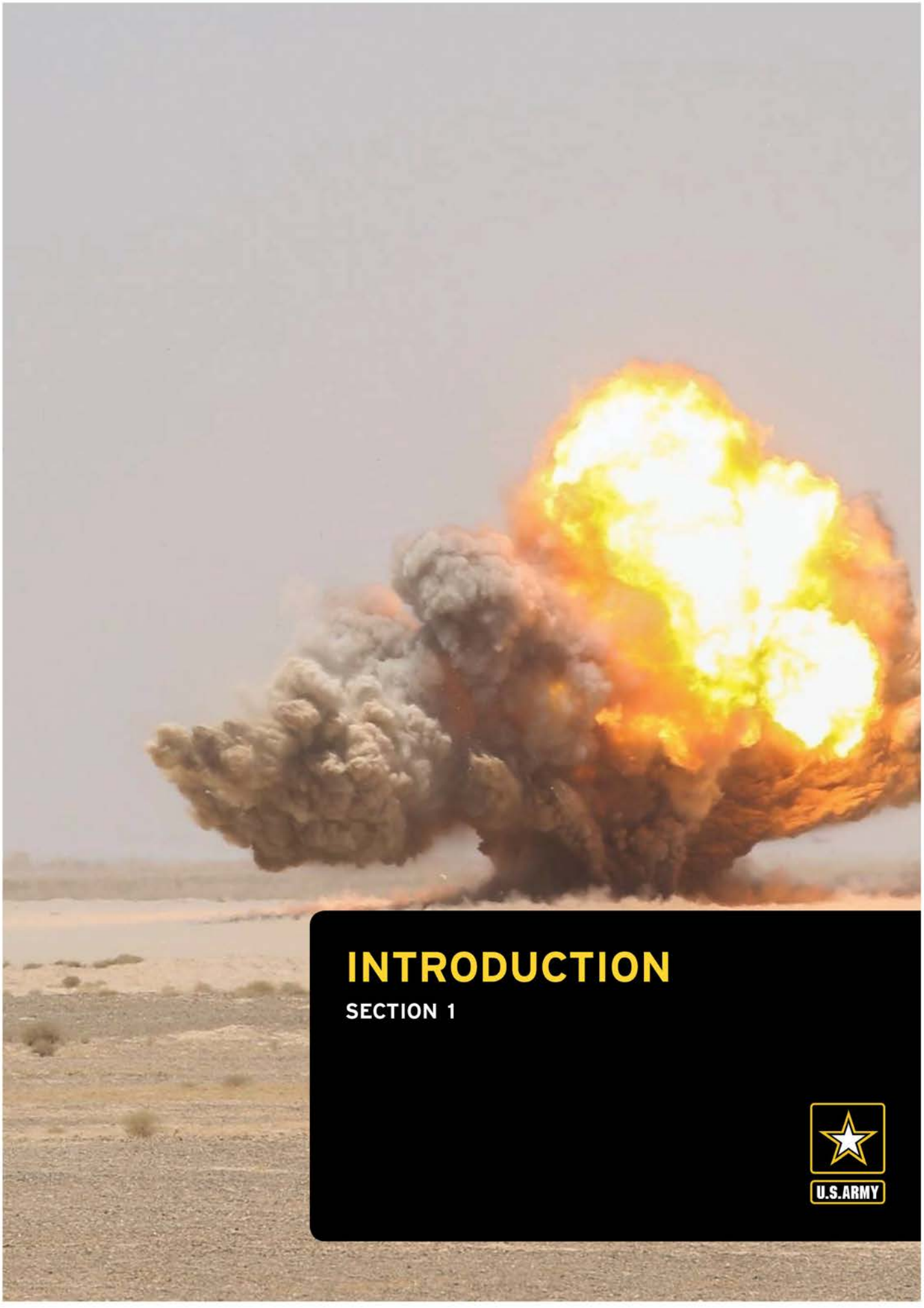
6 EXPLOSIVES SAFETY SUPPORT

TRAINING » 6-1
TECHNICAL REQUIREMENTS » 6-2
ACCIDENT/INCIDENT SUPPORT » 6-3
COMMUNITIES OF PRACTICE » 6-3
MOBILE APPLICATIONS » 6-4
KEY PUBLICATIONS » 6-5
- DoD Issuances » 6-5
- Army Regulations » 6-5
- Army Pamphlets » 6-6
- Army Training Circulars » 6-7
- Army Techniques Publications (ATPs) » 6-7
- DoD Directives » 6-8
- DoD Regulations » 6-9
- DoD Instructions » 6-9
- DoD Manuals » 6-10
- Joint or Multi-Service Regulations » 6-10
- Soldier's Manuals » 6-11
- Handbooks » 6-11
- DDESB Technical Papers » 6-11

Appendix A. Training Descriptions
Appendix B. Explosives Safety Management Program
Appendix C. Explosives Safety Deviation Process
Appendix D. Army Contract Safety
Appendix E. Process Safety Management (PSM)
Appendix F. Key Terms
Appendix G. Abbreviations

Tables

Table 3-1. ESMP Management 3-6
Table 3-2. AE Materials 3-10
Table 3-3. AE Transportation 3-13
Table 3-4. AE Storage 3-16
Table 3-5. Electrical Safety 3-19
Table 3-6. AE Accidents and Incidents 3-21
Table 3-7. Emergency Response 3-25
Table 3-8. Master Planning 3-28
Table 3-9. ESQD Site Planning 3-30
Table 3-10. Risk Management (RM) 3-33
Table 3-11. Demilitarization (demil) 3-36
Table 3-12. Tactical/Deployed ES 3-38
Table 3-13. Industrial and RDT&E AE 3-39
Table 4-1. Explosives Safety Level 1 Training Requirements 4-3
Table 4-2. Explosives Safety Level 2 Training Requirements 4-4
Table 5-1. Other Specialized Explosives Safety Training Descriptions ... 5-1
Table 6-1. DDESB Technical Papers 6-11



INTRODUCTION

SECTION 1

U.S.ARMY

1 INTRODUCTION

PURPOSE »

The U.S. Army has Department of Defense's (DoD's) most extensive explosives safety (ES) mission. The Army as DoD's Single Manager for Conventional Ammunition (SMCA) is the manager of DoD's largest inventory of ammunition and explosives (AE) (also referred to as DoD military munitions) and AE storage and operating facilities. The Army is also the principal provider of ES training. Because of the scope of the Army's ES mission and the inherent risks associated with AE, the Army requires a robust and effective Explosives Safety Management Program (ESMP). The ESMP provides options for mitigating risks to acceptable levels and preventing mishaps that could injure personnel, impact readiness, or cause damage to property and the environment.

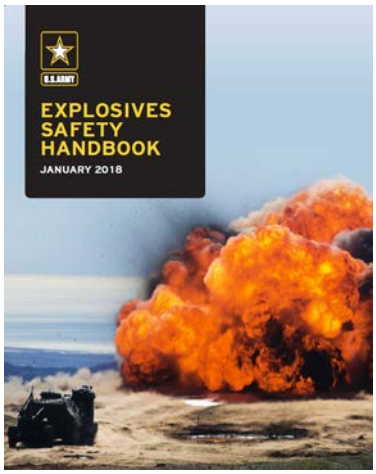
Army Safety and Occupational Health (SOH) professionals have a critical role in ensuring AE are safely manufactured, tested, handled, stored, transported, maintained, used, and disposed. They are directly responsible for developing ES programs and ensuring compliance with applicable laws, regulation, policies, procedures, and ES criteria and Army safety policies at the installations and activities where they are assigned. DoD Military and Civilian personnel in both deployed and non-deployed environments rely on Army

SOH professionals to assist and provide expertise in maintaining the safety of AE-related activities.

This handbook provides Army SOH professionals with the career management and professional development information they need to keep pace with the Army's ES management (ESM) requirements in a dynamic and changing environment. It defines the ES job responsibilities, competency requirements, training opportunities, and support tools necessary to ensure Army SOH professionals possess the skills and expertise necessary to support the Army's ESMP.

HANDBOOK STRUCTURE »

This handbook:



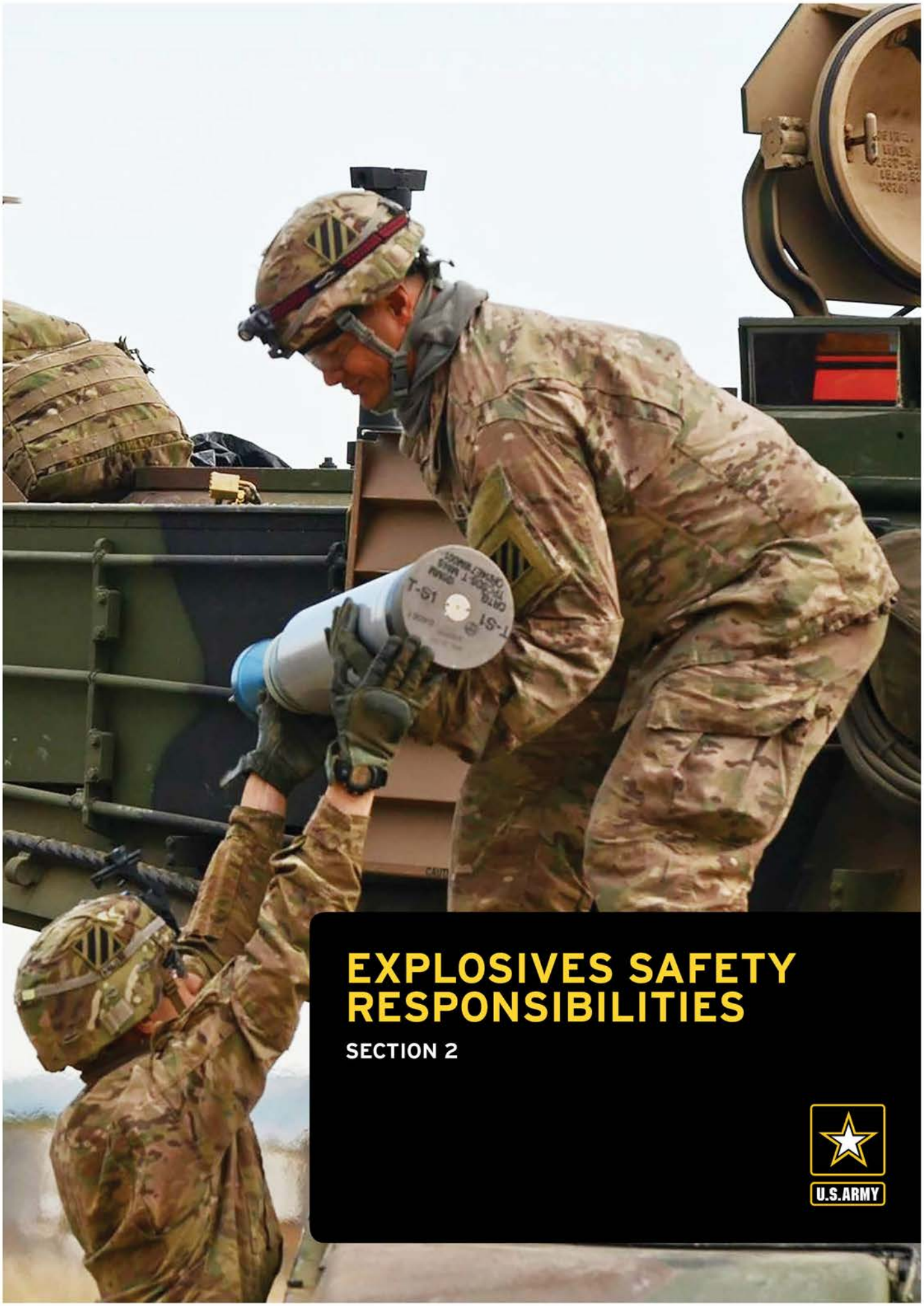
- provides a ready-reference for ES responsibilities and expected competencies for Army SOH professionals;
- defines the ES knowledge, skills, and abilities (KSA) required to meet expected competency levels and ensure a common skill level across the Career Program (CP) 12 field and specific requirements for Army SOH professionals working in specialized assignments with AE missions;
- describes the ES certificate program training and eligibility requirements;
- provides summary descriptions for ES courses; and
- lists sources for ES training and technical support.

The handbook is divided into six sections with seven appendixes:

- Section 1—Introduction. Describes the purpose and structure of the handbook.
- Section 2—Explosives Safety Responsibilities. Describes ES responsibilities for Army safety professionals and other personnel with direct responsibility for supporting the Army's ESMP.

- Section 3—CP-12 Explosives Safety Technical Competency Model. Defines the competency requirements, technical job tasks, and related KSAs for ES competency areas.
- Section 4—Explosives Safety Certificate Program. Outlines Level 1 and 2 ES certificate training and eligibility requirements to include application procedures.
- Section 5—Other Specialized ES Training. Provides additional specialized training for personnel working in research, development, test, and evaluation (RDT&E), industrial, and tactical environments.
- Section 6—Explosives Safety Support. Provides a reference to ES sources for policy, training, and technical support.
- Appendix A—Training Descriptions. Provides summary descriptions for ES training aligned to the Level 1 and 2 certificate programs and for additional training to support specialized AE-related operations and activities.
- Appendix B—Explosives Safety Management Program. Provides a Smart Card as a ready-reference to the Army Explosives Safety Management Program (ESMP).
- Appendix C—Explosives Safety Deviation Process. Provides a Smart Card as a ready-reference to the Army Deviation Approval and Risk Acceptance (DARAD) document (DA Form 7632) and process.
- Appendix D—Army Contract Safety. Provides a Smart Card as a ready reference to Army contract ES requirements, processes, and phases.
- Appendix E—Process Safety Management (PSM). Provides a Smart Card as a ready reference to Army process safety management (PSM) and process hazard analysis (PHA) phases and terminology.

- Appendix F—Key Terms. Defines the key terms used in this Handbook.
- Appendix G—Abbreviations. Defines the abbreviations used in this handbook.



EXPLOSIVES SAFETY RESPONSIBILITIES

SECTION 2

U.S.ARMY

2 EXPLOSIVES SAFETY RESPONSIBILITIES

INTRODUCTION »

It is the responsibility of Army leadership and safety personnel to ensure that safety is a principal element in all operations. Because of the inherent risks associated with AE, the Army requires a vigorous and effective ESMP to help prevent accidents, incidents, near misses, mishaps, and other events that could place DoD personnel or the public at risk, or cause damage to property and the environment.

Although safety is the responsibility of every Army leader, Soldier, civilian, and contractor, the following Army personnel have a direct responsibility for ES management in support of the Army's ESMP:

- Commanders of garrisons, installations, and colonel-level and above commands and agencies with an AE mission
- Civilian SOH professionals; CP-12
- Civilian Quality Assurance Specialists (Ammunition Surveillance) (QASAS) and ammunition Logistics Assistance Representatives (LAR); CP-20
- Ammunition Managers (AM); CP-33
- Ammunition Warrant Officers (WO); Military Occupational Specialty (MOS) 890A
- Aviation Safety Officers (ASO); MOS 152/153/154/155 (A and/or B).

This section provides an overview of the ESMP and the responsibilities for personnel who directly support the SOH professionals in meeting Army ESMP requirements.

SENIOR COMMANDERS RESPONSIBILITIES (SC) »

SCs have the following ES responsibilities:

- Establishing written ESMPs to implement the provisions of Army Regulation (AR) 385-10, Department of the Army (DA) Pamphlet (PAM) 385-64, and DA PAM 385-63 that outline the responsibilities of every organization, including installation and tenant activities with an explosives mission, along with a memorandum of agreement (MOA) or policy that outlines the ESMP requirements and responsibilities of both the garrison or installation commander and tenants as part of the ESMP.
- Appoint in writing an SOH manager per AR 385-10 who is qualified under the Office of Personnel Management standards as the point of contact (POC) for all aspects of the ESMP.
- Ensuring competent and qualified personnel initiate and review required ES submissions (RESS), (e.g., Explosive Site Plans [ESP]) and AE facility designs for garrison or installation master plans that consider ESMP requirements.
- Ensuring personnel who initiate and review deviations and waivers for AE-related operations, facilities, or equipment are qualified to provide the commander with the information needed to make informed decisions regarding the risks being accepted.
- Ensuring operations, training, and construction plans and budgets provide adequate resources to comply with ESMP requirements and to mitigate to the extent possible all ES hazards per AR 385-10.
- Establishing a 3Rs (Recognize, Retreat, Report) Explosives Safety Education Program to advise Soldiers and their families who live or work on an installation, as well as employees and visitors, of the actions to take in the event they encounter, or suspect they have encountered, a munition. (See 3Rs.mil.)

ARMY SAFETY AND OCCUPATIONAL HEALTH (SOH) EXPLOSIVES SAFETY RESPONSIBILITIES »

Army civilian SOH professionals who are assigned explosives related duties, serve primarily in the following CP-12 occupational series:

- General Schedule (GS)-0803, Safety Engineering Series
- GS-0017, Explosives Safety Series
- GS-0018, Safety and Occupational Health Management Series.

Professionals in the GS-0803 series require higher knowledge in mathematics, physics, chemistry, and engineering theories, methods, and techniques that can be acquired by completing a four-year curriculum leading to a bachelor's degree in engineering. Safety engineers may develop standards which set tolerances and stress ratios for strength of materials and other related engineering requirements. They also evaluate proposed designs, methods, and procedures for technical conformance with engineering criteria.

Explosives safety professional positions of the GS-0017 series include positions that have primary responsibility for ESM (i.e., they manage, lead, provide advice, or directly perform AE-related activities). Their responsibilities include protecting personnel and property from the potentially hazardous consequences of an unintentional detonation of AE; mitigating ES risks associated with an intentional or unintentional detonation of AE; managing the risks associated with handling and transporting AE; and ensuring compliance with ES criteria. Typical ES programs deal with such areas as explosives mishap risk assessments, explosion effects, hazard classifications, storage and compatibility groups, separation distances, quantity-distance and siting, and the conduct of munitions response.

Safety and occupational health management professional positions of the GS-0018 series are involved in the management, administration, or operation of an SOH program. They also perform administrative work associated with SOH activities. These activities include the development, implementation, and evaluation of safety-related program functions. Their primary objective is

to eliminate or minimize human injury, property damage, or loss of productivity from harmful contact incidents. They achieve those objectives by designing effective management policies, programs, or practices.

GS-0017 professionals focus primarily on ESM by identifying and documenting ES risks and implementing mitigation efforts. GS-0018 professionals are involved with SOH programs, identifying and mitigating risks for a broader array of safety and occupational hazards.

Safety professionals in the GS-0803 and GS-0018 series differ primarily in the kind of engineering knowledge required. GS-0803 safety engineering work may include reviewing design specifications for construction of structures, designing machine guards for industrial equipment, and evaluating plans and specifications for installation or modification of a ventilation system. SOH managers and specialists in the GS-0018 series apply a practical knowledge of engineering and scientific principles and methods to identify, evaluate, and control occupational hazards, such as those encountered on a construction site, in an industrial plant, or at a port facility.

Army SOH professionals at the mission, garrison, activity, and unit levels are responsible for:

- developing and managing ES programs;
- providing advice on AE safety and risk management;
- evaluating compliance with applicable laws, regulation, policies, procedures, and ES criteria;
- serving as the POC for ESMP-related actions;
- providing guidance on preparing, staffing, and submitting RESSs, DARADs, and explosives licenses;
- maintaining a list of approved DARADs, and advising incoming commanders of the list and plans for correction;
- ensuring potential explosive sites (PES) and exposed sites are indicated on an approved ESP;
- ensuring qualified personnel review plans for protective construction designs for explosive manufacture, testing,

storage, surveillance, maintenance, response actions, demil and disposal facilities for compliance with applicable laws, regulation, policies, procedures, and ES criteria;

- ensuring safety inspections are conducted:
  - periodically (at least annually) for areas where AE-related activities (such as production, handling, storage, use, maintenance, munitions response, demil, and disposal) routinely occur
  - prior to the start of a new AE-related operation (e.g., such as production and demil;
- ensuring AE uploads and other activities that involve the transportation and storage of AE are monitored to validate that ES criteria are met;
- serving as the focal point for and coordinating ESMP requirements with stakeholders, including mission and garrison commanders;
- reviewing garrison or installation master plans and ES quantity-distance (ESQD) arcs to preclude construction in violation of ES criteria and ensure construction of planned facilities or placement of structures will not violate ES criteria prior to and after construction;
- reviewing policies, standing operating procedures (SOPs), and directives for compliance with ES requirements;
- ensuring the management and disposition of materiel potentially presenting an explosive hazard (MPPEH), materiel documented as an explosive hazard (MDEH), and materiel documented as safe (MDAS) is conducted in compliance with DoD policy and in a manner that supports operational readiness and mission requirements;
- ensuring RESS (e.g., ESPs), and explosives licenses are updated and approved at the appropriate level when required;

- ensuring procedures are developed and in place for maintaining fire symbols and chemical hazard symbols current with actual AE stored at particular locations;
- ensuring personnel responsible for managing AE maintain current information on the type and location of AE storage and provide this information to safety and firefighting personnel;
- ensuring personnel responsible for AE-related operations, such as operational personnel including security personnel and firefighters, are trained on fire and chemical hazard symbol recognition and in precautions and procedures for fighting fires when AE is involved;
- ensuring adequate communications among safety, firefighting, security, emergency response, AE surveillance, and storage personnel are established and tested on a regular basis;
- ensuring firefighters are provided information requirements for maintaining current maps, showing all explosives locations with fire and chemical hazard symbols;
- participating in the garrison or installation master planning process, and conducting annual reviews of the garrison's or installation's PES and their associated ESQD arcs to monitor encroachment within an ESQD;
- ensuring ESP and explosives licenses are accomplished or updated;
- monitoring select AE-related activities to evaluate the adequacy of ESM and the integration of risk management to ensure participants understand and comply with ES criteria, to include the following:
    - AE storage, handling, and operating sites
    - AE transportation activities
    - AE disposal and demil activities
    - AE-related SOPs
    - munitions response actions

- weapon systems modifications, special exercises, and test programs, particularly those ones that involve AE
- contingency planning
- combat load and reload operations
- ES training records for unit personnel
- public demonstrations, including “open house,” and “4th of July” type activities;

- assisting commanders and staffs with resolving ES concerns associated with real property known or suspected to contain military munitions that may be unexploded ordnance (UXO) or other categories of munitions and explosives of concern (MEC);
- investigating and reporting AE accidents, incidents, mishaps and near misses, per Department of Defense 6055.09-M, *DoD Ammunition and Explosives Safety Standards*; AR 385-10, *The Army Safety Program*; and DA PAM 385-40, *Army Accident Investigations and Reporting*; and documenting and disseminating ES lessons learned; and
- briefing commanders and staffs, as necessary, to keep the leadership informed of ES requirements and issues and the status of the commander’s ESMP.

QUALITY ASSURANCE SPECIALIST–AMMUNITION SURVEILLANCE (QASAS) RESPONSIBILITIES »

QASAS are responsible for developing, managing, and executing AE surveillance programs at the installation or activity where they are assigned. They inspect and determine the reliability of the Army's AE stockpile. They are also responsible for the quality assurance functions that affect ES during the handling, storage, transportation, maintenance, use, and disposal of AE.

In support of the ammunition surveillance program, QASAS:

- ensure that surveillance functions are performed in accordance with (IAW) the provisions of DA PAM 742-1, *Ammunition Surveillance Procedures,* and applicable publications including technical manuals (TM);
- monitor storage, handling, and maintenance operations for compliance with established quality and ES criteria;
- inspect AE and components to determine quality, safety, and serviceability, and monitor for conditions that could accelerate deterioration; and
- provide technical advice and training to commanders and supporting units on compliance with laws, regulations, policies, procedures, and ES criteria.

QASAS may also provide technical assistance to safety directors and managers in planning, administering, and enforcing the command's ESMP, and technical support in such areas as:

- developing RESS, DARADs, and explosives licenses;
- reviewing designs for explosives production, manufacturing, testing, storage, surveillance, maintenance, demil, and disposal facilities for compliance with ES standards;
- conducting safety inspections of AE handling, storage, use, maintenance, and disposal areas at least annually;
- reviewing SOPs and directives for compliance with ES requirements;

- assisting in the master planning process and reviewing, annually, the master plan to ensure construction is not planned inside ES arcs;
- monitoring operations involving AE to ensure that Army units understand and comply with ES standards;
- monitoring AE uploads and other activities that involve the transportation and storage of AE in other than authorized and licensed storage areas to ensure that pertinent requirements are met; and
- monitoring the management and disposition of MPPEH, MDEH, and MDAS.

AMMUNITION MANAGER (AM) RESPONSIBILITIES »

AMs provide numerous services in the logistics management of AE. They work in the areas of AE supply, maintenance, transportation, and production. Their responsibilities continue throughout the AE life cycle: RDT&E, delivery to the field, use, repair or modification of existing stocks of AE to maintain or improve their capabilities, and eventual disposal. AMs also have specific roles in AE contract oversight, such as:

- assisting requiring activities with defining requirements and establishing and documenting levels of risk;
- conducting hazard analysis and risk assessments, and developing SOPs to ensure compliance with applicable laws, regulations, policies, procedures, and ES criteria;
- determining contract safety elements necessary to minimize risk to AE operations;
- reviewing contractor and government operation ESMPs for compliance with applicable laws, regulations, policies, procedures, and ES criteria;
- coordinating with and providing guidance on AE technical matters affecting ES to the contracting officer's representative (COR) or contracting officer (KO) to ensure adherence to Performance Work Statements (PWS);
- ensuring compliance with the Environmental Protection Agency's (EPA) Military Munitions Rule (MMR) and DoD implementing policy governing the management of waste military munitions (WMM);
- planning and overseeing AE disposal, including consideration of demilitarization technologies and use of resource recovery, recycling and reuse, and demil operations;
- ensuring during demil operations compliance with statutory and regulatory requirements, ES criteria, operational safety, and approved destruction procedures, and the proper certification of disposal operations;

- planning and ensuring safe operations in AE-related facilities, to include the maintenance and repair, renovation, and inspection of facilities, ranges, and training areas IAW laws, regulations, policies, and procedures;
- assisting requiring activities with ensuring AE storage meets ES criteria;
- ensuring that, ESM at the program level is integrated into all aspects of AE production, transportation, supply, maintenance, and demil operations;
- reviewing accident and incident data on shippers and carriers of AE and other hazardous materials (HAZMAT) to assess compliance with applicable federal laws and regulations, and determine whether follow-up actions are required;
- developing, reviewing, and conducting training on ES technical topics;
- ensuring AE is safely packaged, handled, stored, and transported IAW applicable regulations, policies, procedures, and SOPs;
- assisting safety professionals with inspecting, testing, and documenting electrical safety aspects of AE storage and operating facilities; and
- assisting safety professionals with preparation of Explosives Safety Site Plans (ESSPs) and DARADs.

AMMUNITION WARRANT OFFICER (AWO) RESPONSIBILITIES »

AWOs are responsible for supporting commanders and coordinating with safety managers, safety directors, QASAS, and LARs in various areas to include:

- shipping, transporting, receiving, storing, issuing, surveillance testing, maintaining, destroying, and demil AE;
- preparing SOPs for AE operations;
- preparing and reviewing DARADs and requests for ES storage waivers or exemptions;
- investigating and reporting conventional AE accidents, failures, or malfunctions;
- supervising and managing the Standard Army Ammunition System (SAAS) at the unit level;
- preparing, reviewing, and implementing firefighting procedures for conventional AE; and
- planning, reviewing, and implementing policies and procedures for surveillance of conventional, chemical, biological, and nuclear material wastes.

AVIATION SAFETY OFFICER (ASO) RESPONSIBILITIES »

ASOs provide safety oversight for AE storage, transportation, and use in training and hostile environments, aviation life-support equipment (ALSE) shops, aviation maintenance operations, and at forward arming and refueling points (FARP). IAW AR 385-10, *The Army Safety Program*; AR 95-1, *Flight Regulations*; and DA PAM 385-90, *Army Aviation Accident Prevention Program*; they support commanders and safety managers by

- monitoring unit AE and weapons handling programs to ensure compliance with AR 385-10, *The Army Safety Program*, and DA PAM 385-64, *Ammunition and Explosives Safety Standards*;
- monitoring unit ALSE and related survival training programs, including flares, and other munitions used in the ALSE program;
- ensuring ES and physical security requirements for Class V items are met IAW Training Circular (TC) 3-04.72, *Aviation Life Support System Management Program*;
- monitoring storage, operational use, and handling of aircraft internal load, ejection, extraction, and emergency egress munitions (including squibs and flare systems); and
- monitoring the handling of weapons; AE; petroleum, oil, and lubricants (POL); chemicals; hazardous and toxic materials; and lasers for compliance with ES criteria.

CP-12 EXPLOSIVES SAFETY TECHNICAL COMPETENCY MODEL

SECTION 3

U.S.ARMY

3 CP-12 EXPLOSIVES SAFETY TECHNICAL COMPETENCY MODEL

PURPOSE »

This chapter details the CP-12 ES Technical Competency Model, which provides a framework for documenting ES standards of competency and guiding training development for CP-12 safety professionals across career levels. At the core or beginner level, CP-12 personnel need to develop general knowledge and understanding of ESMP requirements. At intermediate and advanced levels, personnel working in organizations or assignments with an AE mission require more in-depth KSAs to perform their ESM functions. A working group of CP-12 senior leaders and subject matter experts (SME) developed this competency model following an analysis of technical job tasks across functional areas and task categories. The competency model was vetted with CP-12 SMEs and revised according to feedback and to ensure alignment with Army requirements.

CP-12 ES RESPONSIBILITIES »

The U.S. Army has the DoD's most extensive ESMP. The breadth of the Army's ESM is based on its role as the SMCA and the fact that it manages DoD's largest AE inventory, and is the principal provider of both ES and AE management training. Because of the size of its safety mission and inherent risks associated with explosives, the Army is focused on building a robust and effective ES program to protect people and property from the unintentional, potentially-damaging effects of DoD military munitions. CP-12 SOH professionals have a critical role in ensuring AE are safely handled, stored, transported, maintained, used, and demil. SOH professionals are directly responsible for developing ES programs and ensuring compliance with applicable laws, regulations, policies, procedures, and ES criteria at the installations and activities to which they are assigned.

TECHNICAL COMPETENCY AREAS »

Through an extensive review of guiding publications and documents, including the CP-12 Army Civilian Training and Education Development System (ACTEDS) plan, policies, regulations, directives, and formal operational requirements, Army safety professionals and CP-12 senior leaders identified and organized ES technical job tasks under 13 technical competency areas:

- ESMP Management
- AE Materials
- AE Transportation
- AE Storage
- Electrical Safety
- AE Accidents and Incidents
- Emergency Response
- Master Planning
- ESQD Site Planning
- Risk Management (RM)
- Demil
- Tactical/Deployed ES
- Industrial Research, Development, Test, and Evaluation (RDT&E) AE.

CAREER SPAN IMPLICATIONS »

AR 690-950 outlines the general progression levels for Army CPs. The levels in that document are just samples; and the exact level names and associated grades vary by CP. Although the CP-12 levels closely follow those established in AR 690-950, some differences exist within each series. SOH professionals are grouped in three levels with progressive responsibility in the Army ESMP and ESM processes.

- GS 7/9/11 interns and entry-level safety personnel assist with ESMP management and provide installation and command support across defined areas.
- GS 11/13 safety and occupational health and professionals provide direct ESMP support and guidance across categories.
- GS 14/15 senior safety directors and managers manage and oversee ESMP.

These guidelines provide a framework for understanding the responsibilities, competency requirements, and expected proficiency levels across ES technical competency areas. However, actual responsibilities and proficiency levels may vary due to specific position and organizational requirements.

These career levels have implications for competency requirements and technical task responsibilities:

- Level 1 personnel assist with ES responsibilities across defined competency areas
- Level 2 personnel develop and implement ESMP and processes across competency areas
- Level 3 personnel manage and direct the execution of ESMP and operations.

TECHNICAL COMPETENCY MODEL TABLES »

The ES technical competency model tables provide an overview of each competency area, including a high-level description of the identified competency requirements, technical job tasks, and related KSAs for each task area.

Job tasks describe the critical technical functions personnel perform to meet occupational series responsibilities. These tasks, which are defined in mission statements and regulations, drive performance and training requirements.

KSAs are the attributes that personnel require to perform defined job tasks. They are generally obtained through education, training, and job experience. Though some overlap is inevitable, KSAs are generally distinguished by the following definitions:

- Knowledge of a body of information applied directly to the performance of a task or function
- Skill in an observable action that follows associated mental activity
- Ability to perform a behavior that results in an observable product
- The ES competency model tables (see Tables 3-1 through 3-13) are organized according to the above technical competency areas.

ESMP Management »

Competency Description

Knowledge of principles and responsibilities for the Army ESMP, and general ESM requirements. Ability to establish and implement an ESMP, advise commands on Army ESM, assist with assessments of AE storage and operating facilities and operations, and monitor the enforcement and effectiveness of ESM. Applies knowledge of applicable laws, policies, publications, rules, procedures, methods, criteria and standards, and practices (e.g., joint, NATO, international, and federal agency standards). Understands how to define training objectives, determine training needs, and present and evaluate training. Maintains documents and ES-related maps, databases, and training materials. Disseminates ESMP-related information to affected personnel.

Job Tasks

- Manage the ESMP to reduce risk and mitigate the potential consequences of an intentional or unintentional AE-related event.
- Develop and implement ES programs.
- Evaluate program activities, directives, policies, SOPs for compliance with DoD, Army, and other ES requirements.
- Develop and review ES policies and plans for every level of management.
- Advise on ES technical issues and requirements.
- Serve as the POC for ESMP-related actions and maintain lines of communication (LOC) between the safety office, command staff, and other organizations with an AE mission.
- Conduct ES training and present ESMP information to personnel, senior management, and other foreign and domestic stakeholders to promote awareness and compliance with applicable AE-related publications and procedures.

- Provide guidance on proper preparation, staffing, and submission of DoD Explosives Safety Board (DDESB) RESS, DA Form 7632, DARAD, licenses and waivers and exemptions.
- Review DARADs, waivers and exemptions for completeness and accuracy prior to forwarding for approval.
- Maintain a list of approved waivers, exemptions, and deviations, and advise incoming commanders of the list and plans for correction.
- PESs and exposed sites are indicated on approved quantity distance (QD) safety submissions (i.e., ESP and Chemical Agent Site Plan [CSP]) and other RESS.
- Ensure plans and protective construction designs for explosive manufacture, testing, storage, surveillance, maintenance, response actions, demil, and disposal facilities are reviewed for compliance with ES criteria by trained and qualified personnel.
- Ensure safety inspections are conducted at least annually for areas where AE-related activities (e.g., production, handling, storage, use, maintenance, munitions response, demil, and disposal) routinely occur.
- Identify safety responsibilities of every organization with AE missions and functions.

Table 3-1. ESMP Management

KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Army ESM principles and responsibilities. ◆ Required elements of an Army ESMP. ◆ Roles and responsibilities of organizations and personnel within the Army ESMP. ◆ Cardinal Rule of ES. ◆ Health, safety, and environmental legislation, regulations, and safe working practices and procedures governing AE, including ES standards prescribed in DA PAM 385-64.

Table 3-1. ESMP Management	
KNOWLEDGE, SKILLS, AND ABILITIES	
	◆ ESMP roles and responsibilities for Army organizations and personnel including the Logistics Review and Technical Assistance Office (LRTAO), installation and garrison commanders, safety managers, Quality Assurance Specialists Ammunition Surveillance (QASAS) personnel, and Ammunition Warrant Officers (AWOs). ◆ ES references and resources. ◆ Processes and procedures for distributing ES promotional material. ◆ Process for resolving identified ES hazards. ◆ Actions to be taken after an AE incident, including accident notification, investigation, and procedures. ◆ ESMP roles, responsibilities, functions, and authorities including for QASAS, AWOs, Master Planners, Safety Personnel, Ammo Managers, Logistics Assistance Representatives (LARs), and fire and environmental personnel.
Skill in	◆ Developing RESS, particularly QD safety submissions. ◆ Monitoring enforcement and effectiveness of AE safety. ◆ Advising commands on ES regulations and practices necessary for mission support. ◆ Responding to Soldiers and Army civilians who identify ES risk and raise safety concerns. ◆ Submitting requests for ES waivers, exemptions and deviation.
Ability to	◆ Conduct safety awareness meetings, training, and procedural reviews to help Soldiers and Army civilians perform their ESMP responsibilities in accordance with (IAW) Occupational Safety and Health Administration (OSHA), DoD, and AR requirements. ◆ Assist the DoD Explosives Safety Board (DDESB) and U.S. Army Technical Center for Explosives Safety (USATCES) with surveys and assessments of AE storage and operating facilities and operations, including explosives safety assistance visit (ESAV) requests. ◆ Develop REES. ◆ Produce and submit ES waivers, exemptions and deviation. ◆ Measure, audit, and evaluate the effectiveness of ES accident prevention programs.

Table 3-1. ESMP Management	
KNOWLEDGE, SKILLS, AND ABILITIES	
	◆ Provide assistance and conduct safety inspections of government owned, contractor operated (GOCO) AE operations IAW applicable OSHA, DoD, and AR requirements. ◆ Conduct accident investigation of ES accidents and incidents IAW applicable standards and regulations.

AE Materials »

Competency Description

Knowledge of AE-related terminology and an ability to communicate the nature, characteristics, hazards, and risk of AE. Ability to identify DoD and non-DoD AE and apply safety, storage, compatibility, warnings, labeling, and handling guidelines or requirements. Applies operational knowledge to review and participate in the development of AE-related SOPs. Ensures ESM principles are incorporated in day-to-day planning and operations. Provides oversight and ensures compliance with applicable regulations for AE and related operations, including compliance with procedures for managing and processing MPPEH and the conduct of munitions response.

Job Tasks

- Ensure DoD and non-DoD AE (e.g., commercial off-the-shelf, foreign AE) is handled, maintained, transported, and stored according to defined characteristics and IAW applicable regulations.
- Ensure safety, storage, compatibility, warnings, labeling, and handling guidelines or requirements are applied to DoD and non-DoD AE.
- Identify environmental considerations for AE operations.
- Identify radiological considerations for the Unit Radiation Safety Officer (RSO).
- Assist commanders and staffs with resolving ES concerns associated with real property known or suspected to contain

UXO, discarded military munitions (DMM) or munitions constituents (MC).

- Use AE-material handling equipment in a safe and efficient manner.
- Ensure authorized tools, equipment, machinery, or parts are used and in proper condition for handling AE.
- Ensure proper disposal of excess, obsolete or unserviceable AE.
- Validate placarding of fire and chemical hazard symbols with actual AE at a potential explosion site.
- Support the AE (including non-standard) Stockpile Reliability Program—including inspections, RDT&E, laboratory tests, surveillance tests, modifications, and maintenance of applicable materiel—and provide advice on technical matters affecting ES.
- Ensure personnel responsible for AE-related operations, such as operational personnel including security personnel and firefighters, are trained to recognize fire and chemical hazard symbols, and in precautions and procedures for fighting fires involving AE.
- Provide AE information and technical assistance including components and packaging, and the characteristics of the weapons in which they are used.

Table 3-2. AE Materials	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Basic terminology associated with Propellants, Explosives, Pyrotechnics (PEP) and specific AE. ◆ Types of AE facilities, structures, and ports. ◆ Nature, characteristics, hazards, and risks of AE substances and articles. ◆ Proper personal protective equipment. ◆ Effects of energetic materials. ◆ Hazardous materials (HAZMAT), classes, and HAZMAT control program. ◆ Purpose and functioning of explosives trains. ◆ Risk associated with improved conventional munitions (ICM) and depleted uranium (DU) AE. ◆ Storage compatibility groups. ◆ Processes for managing and processing MPPEH, material documented as an explosive hazard (MDEH) and material documented as safe (MDAS). ◆ Composition, nature, applications, and handling of cartridge actuated devices (CADs) and propellant actuated devices (PADs) and similar AE. ◆ Non-DoD AE (i.e., non-standard AE, commercial explosives and foreign munitions) safety requirements and inherent issues associated with such. ◆ Processes for AE authorizations, requests, issues, field accountability, sub-unit turn-ins, reconciliation, and the amnesty program. ◆ U.S. Environmental Protection Agency's Military Munitions Rule (MMR), including procedures for compliance and managing waste military munitions (WMM). ◆ Requirements for approving and managing the use of non-standard ammunition (NSA) and safe practices for oversight, storage, handling, use, and destruction of NSA. ◆ Requirements for managing foreign ammunition, test ammunition, altered ammunition, commercial off-the-shelf, unacceptable production, and suspended and restricted AE. ◆ Conventional AE radiation hazards, including radiation aspects of conventional AE components and associated hardware. ◆ DoD and non-DoD and commercial AE safety requirements.

Table 3-2. AE Materials	
KNOWLEDGE, SKILLS, AND ABILITIES	
Skill in	◆ Communicating the nature, characteristics, hazards, and risks of AE. ◆ Identifying types of AE based on color code markings. ◆ Interpreting and applying fire prevention requirements to AE storage and operating facilities. ◆ Applying mixing rules for various types of AE based on compatibility tables. ◆ Identifying and advising on foreign and captured AE considerations. ◆ Advising on processes for dealing with MPPEH and providing guidance on proper identification and disposition of MDEH and MDAS, including identifying, marking, storing, and disposing of AE and HAZMAT. ◆ Communicating the requirements for rocket motor, warhead, and fuse safety. ◆ Identifying NSA.
Ability to	◆ Select the appropriate fire and chemical hazard symbols required to be posted on an AE facility. ◆ Calculate the net explosives weight (NEW) based on the weight of AE. ◆ Apply storage compatibility mixing charts.

AE Transportation »

Competency Description

Knowledge of applicable DoD and DoD Component regulations; applicable Department of Transportation (DOT) and other applicable federal laws and regulations; and applicable international and host nation (HN) regulations for packing, marking, labeling, and transporting AE. Monitors shipments and on-station transportation for compliance. Knowledge of the applicability and requirements of the process for the safe transportation of HAZMAT, which includes AE, as required by the Defense Transportation Regulation (DTR), Federal Hazardous Materials laws included in the Code of Federal Regulations (CFR) Title 49 Parts 100-185, Joint Technical Bulletin (TB) 700-2 Department of Defense Ammunition and Explosives Hazard Classification Procedures, Service Transportation regulations, International Standards that govern the safe transportation of HAZMAT (e.g., the International Civil Aviation Organization's Technical Standards for the Safe Transport of Dangerous Goods, International Maritime Dangerous Goods Code), and other applicable HN requirements. Applies ESM principles to assess the Army ESMP portion involving AE transportation activities, commercial and military carriers, and their respective AE storage sites to ensure compliance with applicable DoD and DoD Component regulations; applicable DOT and other applicable federal laws and regulations; and applicable international and HN regulations governing the transportation of HAZMAT.

Job Tasks

- Monitor AE uploads and other activities that involve the transportation and storage of AE to ensure applicable safety requirements are met.
- Monitor on- and off-installation AE loads using various modes of transportation to verify that applicable DOT, DoD, and HN safety requirements are met.
- Designate installation AE transportation routes to minimize risk.
- Designate installation AE transportation staging areas (e.g., secure hold, safe haven, suspect vehicle, rail holding yards, and cargo parking) to ensure compliance with ES criteria.

- Monitor and inspect transportation-related functions responsible for the safe transportation of AE to ensure compliance with applicable DoD and DoD Component regulations; applicable DOT and other federal laws and regulations, DOT (49 CFR) and 29 CFR, and applicable international and HN requirements.
- Verify classification of AE according to the Joint Hazard Classification System (JHCS) prior to shipment.
- Coordinate secure holding and safe haven area requests from commercial carriers with the appropriate installation and security offices to ensure public safety and security of AE; and ensure Installation Transportation Officers (ITO) update the Transportation Facilities Guide found in the Global Freight Management program IAW DTR guidance to reflect accurate secure hold and safe haven information.
- Coordinate with transportation SMEs in the development of command, theater, and Army-wide standards for ensuring AE safety is maintained in transportation.

Table 3-3. AE Transportation

KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Safe transportation practices for AE. ◆ Requirements and installation responsibilities of secure hold and safe haven for commercial trucks carrying AE as defined in DoD Instruction 5100.76 and DoD 5100.76M. ◆ DOT international standards and HN requirements for standard packaging, marking, labeling, and transportation requirements. ◆ DoD, DA, and Military Standards (MIL-STD) for general marking requirements for AE. ◆ DoD and DA transportation regulations. ◆ AE compatibility requirements, including ability to read and interpret AE loading, blocking, and bracing drawings. ◆ Requirements for preparing and processing documentation for AE and HAZMAT shipments (i.e., shipment clearance, discrepancies, exemption requests, and WMM).

Table 3-3. AE Transportation	
KNOWLEDGE, SKILLS, AND ABILITIES	
	◆ AE supply operations. ◆ AE shipment suspension and restriction controls. ◆ Inspection SOPs for outbound and incoming AE shipments. ◆ Military preservation, packaging, and unitization procedures. ◆ Ammunition Peculiar Equipment (APE) Program. ◆ Motor carrier preventive maintenance requirements and DOT regulations. ◆ AE management information systems, including Total Ammunition Management Information System (TAMIS).
Skill in	◆ Contacting transportation function with proper information, such as Transportation Control Number (TCN), to find status of AE shipments while in transit and to track and trace AE shipments. ◆ Using the Army storage chart and DOT transportation compatibility chart to determine the compatibility of explosives in transportation. ◆ Monitoring AE transportation operations for compliance with ES regulations. ◆ Ensuring Soldiers follow DOT regulations concerning the transportation of AE. ◆ Performing ITO duties and responsibilities when assigned. ◆ Communicating IAW the DTR, Part II, Chapter 204, requests for a Special Permit, Certificate of Equivalency (COE) or Competent Authority Approval (CAA) to be submitted to the DOT for the transportation of HAZMAT. ◆ Communicating and processing exemption requests for HAZMAT shipments. ◆ Verifying compliance with regulations and drawings. ◆ Communicating fire prevention requirements for transport vehicles and AE storage and operating facilities. ◆ Reading and interpreting AE loading, blocking, and bracing drawings to ensure compliance.
Ability to	◆ Define on-post AE transportation routes and ensure they are approved by the commander. ◆ Assist with transportation conveyance inspections. ◆ Review documentation for AE and other HAZMAT shipments.

AE Storage »

Competency Description

Knowledge of applicable DoD and DoD Component regulations; applicable DoT and other federal laws and regulations; applicable international regulations for packing, marking, labeling, and storage of AE. Assesses AE storage sites to ensure compliance with applicable DoD and Army ES regulations and program principles.

Job Tasks

- Monitor AE storage operations and facilities to ensure ES requirements are met.
- Provide oversight of storage and handling of MPPEH, MDEH and MDAS to minimize risk through compliance with applicable DoD policies and regulations.
- Provide monitoring and inspection procedures to ensure WMM are stored IAW SOPs and regulations for safety, security, and environmental protection.
- Verify above-ground magazines (AGM) are located and designed to minimize both the propagation of an explosion to adjacent units and the effects of an explosion.
- Verify earth-covered magazines (ECM) used to store WMM comply with applicable laws and regulations.
- Verify the presence of and inspect lightning protection systems (LPS) on AE storage and operating facilities.
- Develop or recommend command, theater, or Army-wide standards to maintain AE storage safety.
- Assign storage compatibility groups (SCG) based on characteristics, properties, and accident effects potential.
- Identify differences between peacetime and wartime storage requirements.

Table 3-4. AE Storage	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Governing regulations and procedures for safety of AE in storage. ◆ Proper AE storage practices. ◆ DoD, DA, and MIL-STD for general marking requirements for AE. ◆ AE compatibility requirements, including the ability to read and interpret AE loading, blocking, and bracing drawings. ◆ AE storage policies, regulations, procedures, and standards. ◆ AE supply operations. ◆ LPS, inspections, and tests on AE storage and operating facilities. ◆ Storage facility licensing requirements. ◆ Wholesale AE storage operations at the depot level. ◆ Military preservation, packaging, and unitization procedures for AE. ◆ APE Program. ◆ AE management information systems, including TAMIS. ◆ Conditions for safe storage in Tactical Live Training Areas, FARPs, and uploaded vehicles.
Skill in	◆ Inspecting AE storage and operating facilities. ◆ Ensuring AE is stored in licensed facilities and quantities do not exceed amounts authorized by the license. ◆ Monitoring AE storage operations for compliance with ES regulations. ◆ Applying monitoring and inspection procedures to ensure AE are stored IAW applicable regulations for safety, security, and environmental protection. ◆ Verifying the existence of security construction statements, DDESB-approved QD safety submissions, and explosives storage licenses to ensure magazines are located and designed to satisfy safety and ES criteria and are consistent with standard storage drawings. ◆ Verifying compliance with applicable regulations and drawings. ◆ Reading AE storage drawings and planographs.

Table 3-4. AE Storage	
KNOWLEDGE, SKILLS, AND ABILITIES	
Ability to	◆ Inspect LPSs. ◆ Conduct storage site inspection and compliance monitoring. ◆ Inspect AE storage sites to ensure compliance with applicable regulations. ◆ Interpret and apply fire prevention requirements to ammunition facilities.

Electrical Safety »

Competency Description

Knowledge of electrical safety procedures and lightning protection principles for AE storage and operating facilities. Knowledge of static electricity sources, electro explosive devices (EED), and hazards of electromagnetic radiation on ordnance (HERO). Ability to determine appropriate control measures for static electricity.

Job Tasks

- Ensure compliance with electrical safety procedures and testing requirements for AE storage and operating facilities.
- Review the results of electrical safety tests (e.g., static, lightning protection systems, and grounding) to validate tests are performed correctly and at the appropriate intervals.
- Classify hazardous locations by the properties of the flammable vapors, liquids, or combustible dusts or fibers.
- Ensure electrical equipment is listed by a recognized testing agency or certified for use by a qualified engineer.
- Identify the requirements for electrical service lines in AE areas.
- Select lighting systems approved for each classification of hazardous locations.
- Implement measures to minimize static electricity in areas containing materials sensitive to static spark discharge.
- Conduct electrical tests and visual inspections of electrical areas and equipment.
- Implement and maintain a ground system in AE facilities to provide personnel, equipment, and facility protection.
- Recognize and mitigate hazards of electromagnetic radiation of EEDs.

- Maintain close coordination with and provide electrical safety support to commanders, units, and safety personnel.
- Monitor AE electrical safety practices in combat, training, and contingency operations.

Table 3-5. Electrical Safety	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Procedures for inspecting, testing, and documenting electrical safety aspects of AE storage and operating facilities. ◆ Potential interface with equipment and systems that may compromise the safety of AE. ◆ Potential sources of static electricity. ◆ Control measures for static electricity. ◆ Hazards associated with EEDs and HERO. ◆ Principles of lightning generation and its effects on equipment and structures. ◆ Army guidance and National Fire Protection Association standards for LPSs. ◆ General principles of lightning conductors, bonding, and grounding systems. ◆ DoD and Army ES regulations, standards, and principles. ◆ ESMP roles and responsibilities for DoD and Army organizations and personnel. ◆ Lightning protection principles and electrical processes and requirements. ◆ ES references and resources. ◆ Grounding and bonding systems for high hazard areas.
Skill in	◆ Grounding and bonding for test and evaluation. ◆ Reviewing lightning protection designs for compliance with standards. ◆ Advising on design of grounding, bonding, and lightning protection. ◆ Identifying hazards associated with EEDs.

Table 3-5. Electrical Safety	
KNOWLEDGE, SKILLS, AND ABILITIES	
Ability to	◆ Ensure documentation on lightning protection and ground system inspections are conducted IAW regulations. ◆ Determine appropriate control measures for static electricity. ◆ Identify unsafe ES practices and recommend the steps necessary to mitigate issues or suspend operations. ◆ Review SOPs for compliance with ES standards. ◆ Inspect, test, and document electrical safety aspects to AE storage and operating facilities. ◆ Approve LPS designs. ◆ Analyze and apply HERO standards to AE operations.

AE Accidents and Incidents »

Competency Description

Knowledge of the actions to be taken in an AE accident or incident, sources of information, and the purpose for reporting “near-miss” situations. Ability to ensure proper AE accident investigation and notification procedures are followed, conduct trend analysis of accident and incident reports, develop countermeasures to minimize accident risk, and communicate lessons learned from accident and incident analyses.

Job Tasks

- Investigate and report AE accidents, incidents, and mishaps IAW the applicable provisions of DoD 6055.09-M, AR 385-10, and DA PAM 385-40, and document and disseminate ES lessons learned.
- Document lessons learned based on findings, causes, and recommendations from investigations and analyses.
- Update publications and procedures (e.g., emergency response procedures and SOPs) to include lessons learned.
- Ensure follow-up actions from an AE mishap investigation have been implemented.
- Advise commanders on appropriate courses of action IAW governing regulations, policies, and procedures after AE accidents or incidents.
- Prepare technical reports on the cause, repercussion, and impact of AE accidents or incidents.
- Provide technical guidance and support to safety and emergency personnel during AE emergencies to control, mitigate, and eliminate actual or potential threats to human health or the environment.
- Provide technical assistance to commercial carriers transporting military AE and other dangerous regulated articles over public

highways and railways when they are involved in AE accidents and incidents.

- Provide technical assistance with AE accident and incident investigations to the investigating team and assess the impact of resulting suspension on the Army's stockpile, training, and readiness.
- Contact the RSO during accidents and incidents involving radioactive material.

Table 3-6. AE Accidents and Incidents

KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Roles and responsibilities for responding to AE accidents and incidents. ◆ Actions to be taken in after an AE accident or incident (e.g., notification, investigation, and procedures). ◆ Relevance of ES-related activities and how they may affect prevent or mitigate an accident or incident. ◆ Classes of AE malfunctions and processes to be followed after a suspected AE malfunction. ◆ Sources of information that inform an AE accident and incident investigation. ◆ Process to be followed immediately following a suspected AE malfunction. ◆ Similarities and differences between an AE accident or incident and an AE malfunction. ◆ Reporting procedures for AE malfunctions. ◆ Consequences to the AE stockpile malfunction reports. ◆ Purpose and procedures for reporting "near-miss" situations. ◆ Regulations, policies, and procedures addressing AE accident and incident responses. ◆ Inherent hazards of AE, toxic chemicals, and radioactive material. ◆ Emergency response criteria for AE accidents and incidents. ◆ Installation Emergency Response Management procedures. ◆ Procedures for emergency shutdown and evacuation. ◆ AE accident notification and investigation procedures.

Table 3-6. AE Accidents and Incidents	
KNOWLEDGE, SKILLS, AND ABILITIES	
Skill in	◆ Identifying fire and hazardous material markings, placards, symbols, and color codes for AE and other materiel. ◆ Using toxic chemical agent detection and measurement equipment. ◆ Performing Chemical Accident/Incident Response Assistance (CAIRA) control duties. ◆ Inspecting AE for defects and non-conformities. ◆ AE accident and incident investigation and reporting procedures.
Ability to	◆ Ensure proper AE accident investigation and notification procedures are followed. ◆ Conduct trend analyses of AE accident and incident reports. ◆ Develop countermeasures to minimize accident risk. ◆ Communicate and disseminate lessons learned from AE accident and incident reports and analyses. ◆ Identify symptoms of toxic chemical agent exposure and apply appropriate first aid measures. ◆ Apply decontamination procedures for AE and toxic chemicals agents. ◆ Perform conveyance inspection.

Emergency Response »

Competency Description

Knowledge of emergency response criteria and actions for AE accidents and incidents, including fire and chemical symbols, principles of fire protection, and prevention and procedures for emergency shutdown and evacuation.

Job Tasks

- Advise commanders on appropriate courses of action IAW emergency response criteria for AE, including toxic chemical agent emergencies.
- Enforce emergency shutdown, evacuation, and Emergency Response Management procedures.
- Provide technical guidance and support to safety and emergency personnel during AE emergencies to control, mitigate, and eliminate actual or potential threats to human health or the environment.
- Provide technical assistance for AE accident and incident investigations to the investigating team and assess the impact of resulting suspension on the Army's stockpile, training, and readiness.
- Comply with installation and other SOPs and the Emergency Planning Community Right-To-Know Act (EPCRA) requirements.
- Ensure personnel responsible for managing AE maintain current information on the type and location of AE storage and operating facilities and provide this information to safety and firefighting personnel.
- Ensure adequate communications among safety, firefighting, security, emergency response, and ammunition surveillance and storage personnel is established and tested on a regular basis.
- Ensure firefighters are provided with information for maintaining current maps, showing all explosives locations with fire and chemical hazard symbols.

- Provide prompt notification to emergency response agencies, EPA, and the affected public in the event of an AE accident or incident.
- Provide input to the emergency response plan used by emergency responders during mishaps or disasters impacting AE to ensure it is current and validated.

Table 3-7. Emergency Response	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Principles of fire protection and prevention. ◆ Emergency response actions and channels for communication during AE accidents and incidents. ◆ Fire and chemical symbols for AE. ◆ Emergency response criteria for AE accidents and incidents. ◆ Emergency response criteria for chemical accidents and incidents, including CAIRA responsibilities. ◆ Procedures for emergency shutdown and evacuation. ◆ Requirements for obtaining support of an AE emergency to address an AE accident or incident, or AE encountered in the public domain, or to address UXO or other AE posing an explosive hazard to personnel or critical assets. ◆ Inherent hazards of AE, toxic chemical agents, and radioactive material. ◆ Emergency response criteria for AE accidents and incidents. ◆ Installation Emergency Response Management procedures. ◆ Governing regulations, policies, and procedures addressing AE accident and incident responses.
Skill in	◆ Identifying fire and hazardous material markings, placards, symbols, and color codes for AE and other material. ◆ Using toxic chemical agent detection and measurement equipment. ◆ Performing or supporting CAIRA control duties. ◆ Applying AE accident and incident investigation and reporting procedures.

Table 3-7. Emergency Response	
KNOWLEDGE, SKILLS, AND ABILITIES	
	◆ Applying decontamination procedures for AE and toxic chemical agents.
Ability to	◆ Understand defects and non-conformities. ◆ Identify symptoms of toxic chemical agent exposure and apply first aid measures. ◆ Produce AE accident and incident investigation reports. ◆ Develop emergency response plans for AE.

Master Planning »

Competency Description

Knowledge of the purpose and use of master planning and monitoring encroachment on explosives facilities. Ensures ESQD arcs are annotated on installation master planning maps and interpreting Geographic Information System (GIS) maps. Ensures Real Property Inventory systems accurately reflect required ES information.

Job Tasks

- Participate in the installation master planning process; conduct annual reviews of the installation's PES location map to monitor encroachment within ESQD; and ensure ESPs and explosives licenses remain accurate and are updated.
- Review installation master plans and ESQD compliance to ensure that planned facilities are not within approved ESQD, both prior to and after construction.
- Review installation Real Property Inventory and GIS data to ensure facility and infrastructure information accurately represents ES data required by Explosives Safety Siting (ESS) software.
- Use GIS software and ESS software to develop ESP submissions for new, existing, and modified facilities or infrastructure.
- Ensure a DARAD, waiver or exemption or Secretarial Certification, as appropriate, is approved prior to construction of facilities that are not related to AE operations which is required within ESQD.

Table 3-8. Master Planning	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Master planning process and guiding publications. ◆ Real Property Inventory. ◆ Geographic Information Systems. ◆ Requirements for ESSP, waivers, exemptions, deviations and licensing. ◆ Purpose and use of master planning. ◆ Purpose and process for monitoring encroachment near or within an ESQD.
Skill in	◆ Interpreting PES location maps. ◆ Using Explosives Safety Siting software. ◆ Modifying Geographic Information Systems. ◆ Updating Real Property Inventory.
Ability to	◆ Determine ESQD. ◆ Ensure ESQD arcs are annotated on installation master planning maps. ◆ Develop ESQD master planning maps. ◆ Use Geographic Information System software. ◆ Use Explosives Safety Siting software. ◆ Incorporate ESQD master planning maps in ESP submissions.

ESQD Site Planning »

Competency Description

Knowledge of ES criteria in planning for PES and ES location, construction, and layout. Participates in the development and review of RESSs, waivers, exemptions, and deviations. Recommends actions to ensure compliance with ES criteria. Coordinates technical assistance from QASAS and ES specialist, and ensures exposures are indicated on ESQD site plans. Reviews QD safety submissions and other RESSs, licenses, waivers, and ESQDs for compliance with ES criteria and regulations.

Job Tasks

- Develop and coordinate QD safety submissions with installation master planning or facility engineers, affected operating units, safety personnel, logistics, QASAS, fire departments, security, and environmental and health agencies.
- Develop, coordinate, and submit RESSs IAW the provisions of DA PAM 385–61, DA PAM 385–64, and DA PAM 385–65.
- Forward ESQD site plans through the designated chain of command to USATCES for submission to the DDESB.
- Apply ESQD for PES, including AE operating facilities.
- Verify that PESs and ESs have an approved QD safety submission and license; and, if appropriate, a waiver, exemption, or deviation.
- Ensure ESQD site plans are approved before construction begins.
- Participate in the development of QD safety submissions to ensure compliance with DoD and Army ES criteria and policy.
- Ensure protective construction designs for explosives facilities are reviewed by technical experts.
- Ensure compensatory measures are effectively implemented.

Table 3-9. ESQD Site Planning	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Minimum required levels of protection to facilities, material, and personnel. ◆ ESQD siting and criteria references. ◆ Basic ESM principles. ◆ General ESM and ESQD terms ◆ Regulatory requirements, terms and oversight. ◆ ESM considerations in ESQD. ◆ ES criteria and limits. ◆ License and waiver preparation and review procedures. ◆ Levels of ES protection and expected effects (personnel and asset) at each level.
Skill in	◆ Coordinating technical assistance from QASAS, ES specialists and facility engineers in siting and layout preparation of new and revised storage facilities. ◆ Recognizing ESM requirements construction considerations for explosives sites. ◆ Explaining the purpose of the four levels of protection. ◆ Applying ESM considerations in ESQD planning. ◆ Defining and employing requirements for QD safety submissions. ◆ Ensuring compliance with ES criteria and regulations. ◆ Communicating ESM requirements for construction considerations for explosives sites. ◆ Employing the principles of QD. ◆ Considering fragment effects when planning facility location and layout. ◆ Identifying anticipated storage equipment and quantities required when planning new PES. ◆ Applying ESQD separation distances and ES to PES relationship requirements in preparation of QD safety submissions.

Table 3-9. ESQD Site Planning	
KNOWLEDGE, SKILLS, AND ABILITIES	
Ability to	◆ Review QD safety submissions and other RESS for compliance with ES safety criteria and applicable regulations, including DA PAM 385-61, DA PAM 385-64, and DA PAM 385-65. ◆ Ensure licenses are properly prepared and indicate the NEW authorized to be stored in an AE facility. ◆ Ensure every exposure is indicated in QD safety submissions. ◆ Develop and track RESS packages through the approval process. ◆ Ensure waivers are properly prepared and indicate the NEW authorized to be stored in a facility. ◆ Determine the correct separation distances (e.g., inhabited building and public traffic route [PTR] distances) and NEW for a given scenario. ◆ Determine circumstances that require a QD safety submission. ◆ Complete an explosives license. ◆ Calculate the total quantity of DoD military munitions allowed at PES, given the NEW of each, using the JHCS listing or similar resource. ◆ Determine levels of protection and expected damage effects at each level. ◆ Decipher QD tables. ◆ Measure distances to be used in QD calculations. ◆ Determine where firewalls, exits, dividing walls, emergency exits, and safety chutes should be placed. ◆ Define site limits for personal protection. ◆ Use ESS Toolkit and Site Planner software to develop an QD safety submission.

Risk Management (RM) »

Competency Description

Knowledge of ESM principles, the deviation processes, and RM considerations. Identification of the differences between waivers, exemptions, and deviations, and their respective approval processes; complete a DA Form 7632, DARAD; and ensure risk assessments are integrated into AE operations. Develops risk assessments and implements risk mitigation or acceptance measures for AE operations using principles, methods, and tools.

Job Tasks

- Establish and document level of risk using Army standard RM worksheets.
- Identify and manage the risks associated with AE operations.
- Perform a risk assessment on new and modified industrial operations and facilities involving AE.
- Conduct an operational or task hazard analysis to support SOPs for AE.
- Recognize, assess, manage, and document risks and hazards in AE environments.
- Consider hazard probability and hazard effect when determining risk levels and courses of action (COA).
- Monitor, on a periodic basis, AE storage, handling, and operating sites, and AE transportation activities to evaluate ES and the integration of RM.
- Identify explosives hazard controls.
- Provide guidance on AE risk mitigation using the results of hazard identification and risk analyses.
- Apply analytical techniques to understand the probability and severity of an AE mishap to prioritize and recommend mitigation strategies.

- Develop risk assessment documentation based on Army requirements.
- Ensure implementation and monitoring of approved risk mitigation procedures.
- Participate in developing training programs to facilitate a understanding of AE hazards and controls.
- Disseminate lessons learned from AE mishaps or near misses to prevent recurrences.

Table 3-10. Risk Management (RM)

KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Principles of deviating from ES criteria. ◆ DARAD process, including approval authority, waivers, and exemptions. ◆ Purpose and components of Certificate of Compelling Reason (CCR) and conditions of use. ◆ Process for obtaining a CCR. ◆ Construction considerations in relation to RM and deviation approvals. ◆ RM for explosive RDT&E. ◆ Risk mitigation and management for high hazard areas.
Skill in	◆ Ensuring the risk assessment process is integrated into AE operations and reviewed at the appropriate level. ◆ Identifying and communicating construction considerations in relation to RM and deviation approvals. ◆ Distinguishing between the approvals of waivers, exemptions, and deviations.

Table 3-10. Risk Management (RM)	
KNOWLEDGE, SKILLS, AND ABILITIES	
Ability to	◆ Complete a DARAD. ◆ Employ explosives QD principles necessary to provide the minimum required levels of protection to facilities, material, and personnel, include levels of protection and expected damage effects at each level. ◆ Measure, audit, and evaluate the effectiveness of ES accident prevention programs. ◆ Design a RM plan for RDT&E operations.

Demilitarization (Demil) »

Competency Description

Knowledge of demil operational and safety requirements, including applicable laws, regulations and DoD and Army policies. Provides safety guidance and oversight, and ensures SOPs are updated and reviewed within six months of initiating an operation.

Job Tasks

- Review demil SOPs IAW regulations.
- Ensure proper warnings (e.g., flags, marking) at entrances to demolition ranges during operations.
- Ensure compliance with prescribed safety procedures, including for firefighting.
- Ensure that appropriate means of communication are established and maintained between personnel on the demolition range, preparing AE for demolition or burning, and supporting base facilities.
- Ensure only trained and qualified personnel perform demil operations and searches of the demil area for kicked out AE.
- Ensure site used for open burning (OB) and open detonation (OD) operations are properly sited and permitted separated from other facilities as specified in DA PAM 385-64.
- Ensure pans or trays used for OB are of locally-approved construction and appropriately grounded.
- Confirm that concrete pads used for OB are adequately protected before the start of a demil operation.
- Ensure disposal sites permitted as hazardous waste treatment facilities under 40 CFR comply with 40 CFR 265.382 and are sited per DoD and Army ES criteria.

Table 3-11. Demilitarization (demil)	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Methods, procedures, and techniques for the demil of AE. ◆ DoD and Army requirements for AE demil. ◆ Applicable laws, regulations and policies governing AE demil ◆ Demil technology and materials. ◆ Range SOPs for demil. ◆ Certification of disposal operations (CODO). ◆ Demil operations, including of the management and disposition of MPPEH, MDEH and MDAS.
Skill in	◆ Communicating operational safety for AE demil operations. ◆ Applying and prescribing safety precautions for AE demil. ◆ Selecting sites for OB or OD. ◆ Monitoring OB or OD operations.
Ability to	◆ Develop and maintain an SOP for AE demil operations. ◆ Develop a QD safety submission for a demil site.

Tactical/Deployed ES »

Competency Description

Knowledge of principles and procedures for managing ammunition holding areas (AHAs), in-theatre site inspection and approval processes, and the safe movement of AE in deployed environments. Ability to coordinate and advise personnel in tactical and deployed environments on approval of AE licenses, QD site plans and other RESS and AE facility designs.

Job Tasks

- Review in-theatre PES location maps to monitor encroachment within ESQD and ensure required QD site plans and other RESS are complete, correct and submitted; and explosives licenses are accomplished.
- Perform site inspections in-theatre.
- Review QD safety submissions to ensure licenses are updated and approved at the appropriate level.
- Coordinate and advise personnel in tactical and deployed environments on approval of AE licenses, QD safety submissions, and AE facility designs.
- Ensure plans and designs comply with Army and HN safety standards.
- Determine QD compliance and ESQD measurement points to unique requirements of in-theater operations.
- Ensure activities involving transportation and storage of AE are monitored for compliance with ES criteria, applicable DoD and Army regulations and policies; and applicable HN and international agreements.

Table 3-12. Tactical/Deployed ES	
KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Types of AE operating facilities, structures, and ports. ◆ Criteria for AE transportation routes. ◆ Safe practices for packing, transportation, and storage of AE in tactical environments. ◆ Principles and procedures for managing basic load ammunition holding areas (BLAHAs) and AHAs. ◆ ES education training (e.g., 3Rs), particularly awareness of the dangers associated with UXO.
Skill in	◆ Reviewing in-theatre design and construction plans for PES for proper ES controls. ◆ Applying QD terms and categories of protection to in-theatre operations. ◆ Reviewing and coordinating DARADs for in-theatre operations. ◆ Communicating procedures for uploading AE to tactical storage areas. ◆ Consulting on the safe movement and storage of AE at the brigade through the Army Command (ACOM) level in deployed environments.
Ability to	◆ Employ master planning and encroachment monitoring to in-theatre operations. ◆ Apply QD safety submissions, licenses, and waivers to in-theatre AE operations. ◆ Interpret QD tables and apply to in-theatre QD safety submissions (e.g., ESPs), planning and assessment. ◆ Apply the ESM principles for ES deviations, including RM and processes for completing a DARAD and obtaining a CCR to in-theatre operations.

Industrial and RDT&E AE »

Competency Description

Knowledge of RDT&E and industrial ES principles, practices and unique considerations. Monitors ES in production and maintenance operations, and develops RM plans.

Job Tasks

- Develop RM plans for AE production and RDT&E operations.
- Integrate RDT&E and industrial ES considerations into the organization's ESMP.
- Monitor and evaluate RDT&E AE shipped to the field for evaluation and ensure the proper paperwork and waivers are obtained prior to shipment.
- Ensure ES process are re-evaluated after changes to AE-related materials, technologies, processes, procedures, and equipment.
- Ensure approved QD safety submissions and required deviations are in place for facilities where AE operations are to be or being performed.

Table 3-13. Industrial and RDT&E AE

KNOWLEDGE, SKILLS, AND ABILITIES	
Knowledge of	◆ Fundamental principles of AE production, renovation and maintenance operations. ◆ General AE production hazards, ES and general safety procedures. ◆ ES and general safety requirements specific hazardous locations. ◆ OSHA regulation and 29 CFR 1910, and the implications for ES. ◆ Process safety management (PSM) competencies. ◆ Role of RDT&E and its inherently higher risk than production.

Table 3-13. Industrial and RDT&E AE	
KNOWLEDGE, SKILLS, AND ABILITIES	
	◆ Specific methods of research being performed in the assigned area of responsibility, with a focus on chemical and physical interactions that may result in hazardous consequence. ◆ Methods for evaluating foreign AE with an emphasis on ES and hazard analysis associated with each method. ◆ Unique hazards of ES milling and chemical wash-out procedures. ◆ Procedures for safety testing of AE. ◆ HAZMAT testing procedures and interpretation (explosives and propellants). ◆ Explosive hazard classification required for RDT&E testing, analysis, and documentation processes. ◆ Requirements for weapons and AE safety certification processes, including those of other Services weapons safety boards. ◆ RDT&E processes for in-service surveillance (life testing) of AE. ◆ Special HAZMAT storage, special packing instructions, interim hazard classification requirements, and handling for new, untested, and experimental materials and AE for which the properties may not be fully known or understood.
Skill in	◆ Communicating RM principles and practices for AE-related RDT&E. ◆ Employing Hazard Analysis Working Group (HAWG) methodology to AE operations.
Ability to	◆ Develop RM plans for AE production and RDT&E operations. ◆ Employ HAWG methodology to AE operations. ◆ Monitor and evaluate RDT&E AE being fielded for evaluation. ◆ Ensure proper paperwork and waivers are obtained prior to shipment of RDT&E AE. ◆ Develop and conduct training on RM processes for RDT&E and industrial operations involving AE.

EXPLOSIVES SAFETY CERTIFICATE PROGRAM

SECTION 4

U.S.ARMY

4 EXPLOSIVES SAFETY CERTIFICATE PROGRAM

SOH Professionals have a critical role in ensuring AE are safely handled, stored, transported, maintained, and used throughout its life cycle. They are directly responsible for ESM to include developing ESMPs and ensuring compliance with applicable laws, regulation, policies, procedures, and ES criteria at installations and activities to which they are assigned. CP-12's senior leaders and SMEs designed the Army's ES Certificate Program following a comprehensive assessment of ES policy, technical responsibilities, and career developmental needs to define the competencies and training necessary to support the Army ESMP. This assessment resulted in the development of unique requirements for each certificate track.

The ES Certificate Program is accredited through the American National Standards Institute (ANSI) and is maintained in accordance with ANSI and the American Society for Testing and Materials (ASTM) E2659-15, Standard Practice for Certificate Programs.

PROGRAM SCOPE »

The CP-12 ES Professional Certificate Program offers two training certificate tracks:

- ES Professional Certificate—Level 1
- ES Professional Certificate—Level 2.

Level 1 »

This certificate recognizes safety professionals possessing general knowledge and understanding of ESM principles and requirements. CP-12 SOH Professionals are eligible to earn the ES Level 1 Certificate. Military and DoD personnel who meet defined requirements are also eligible.

Level 2 »

Building on the success of the ES Level 1 Certificate Program, this certificate is specifically designed for careerists having ESM as a significant part of their job responsibilities. It recognizes those individuals who complete advanced training in ESM principles and the management of ESMP, and who meet technical requirements. Eligibility is also open to military and DoD civilian personnel having ES as a significant part of their job activities. Due to the frequency at which ES policy, standards, and tools are updated, this certificate has a 5 year renewal requirement.

Achievement of each certificate track is based on the successful completion of established training requirements.

BENEFITS »

Safety professionals fulfill a critical role in developing, maintaining, and continuously improving the Army's ESMP. The ES Professional Certificate Program helps the Army establish a common skill level (CSL) across commands and activities with AE missions, and helps ensure safety professionals' knowledge and abilities keep pace with technological, professional, and mission advancements.

Participation in the ES Professional Certificate Program helps members:

- gain ES KSAs to apply immediately on the job;
- communicate and advise on current ESM principles and ES policy, standards, tools, lessons learned, and resources;
- implement an Army ESMP that complies with policies, standards, tools, and procedures; meet current and future ESMP challenges; and
- demonstrate a high level of commitment to ES and continuous improvement of the Army ESMP in support of the Warfighter.

TRAINING REQUIREMENTS »

ES Level 1 Certificate Program »

The ES Professional Certificate (Level 1) is a lifetime certificate. The ES Professional Certificate Program applies to the following CP-12 job series: 0017, 0018, 0019, 0081, 0640, 0690, 0803, 1306, 1815, and 1825, and to military personnel who are ES professionals. Competency development at Level 1 is accomplished through a series of mandatory distance learning (DL) courses specific to ES functions and general safety management courses incorporated into the intern training program. Table 4-1 lists the courses required to ensure a common skill level in ES across the Army SOH workforce.

Table 4-1. Explosives Safety Level 1 Training Requirements

DAC course	Requirement	Mode	Duration
Introduction to Ammunition, 9E-F67/920-F35 (DL) (Ammo-45)	Mandatory	DL (self-paced)	8 hours*
U.S. Army Explosives Safety Familiarization, 4E-F44/645-F28 (DL) (Ammo-63)	Mandatory	DL	12 hours*
Ammunition Publications, 4E-F62/645-F46 (DL) (Ammo-78)	Mandatory	DL	6 hours*
Introduction to Explosives Safety Management for Safety Professionals, 4E-F26/431-F10 (DL) (Ammo-107)	Mandatory	DL	18 hours*
Total required hours			**40–58**

* Actual time required for completion of DL courses varies based on experience level and learning ability. Reported times represent average completion times generated from a random sample of participants.

ES Level 2 Certificate Program »

Applicants must possess the CP-12 Explosives Safety Professional Certificate—Level 1. Competency development for the ES Level 2 Certificate is accomplished through a series of mandatory DL and instructor-led (IL) courses specific to ES. This course scheme is designed to ensure Army personnel with significant ES roles or responsibilities have the knowledge and working ability necessary to support the Army's ESMP and meet mission requirements. Table 4-2 lists the courses required to ensure a common skill level in ES for specialized assignments.

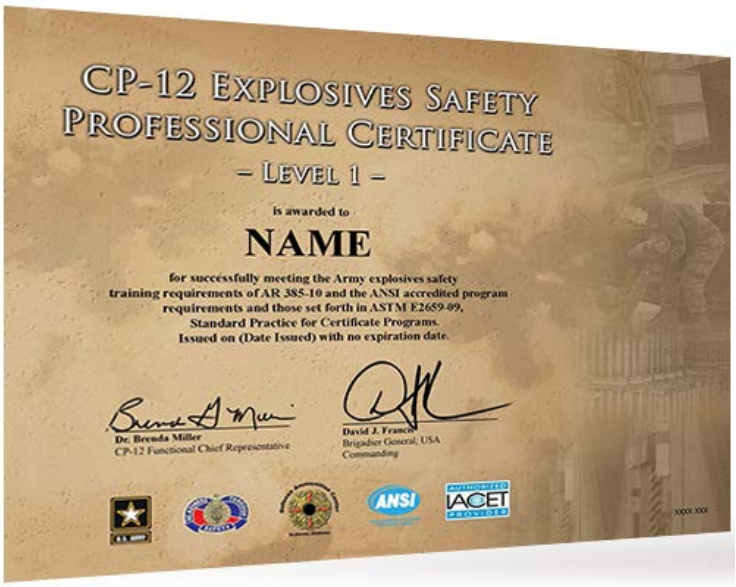
Table 4-2. Explosives Safety Level 2 Training Requirements

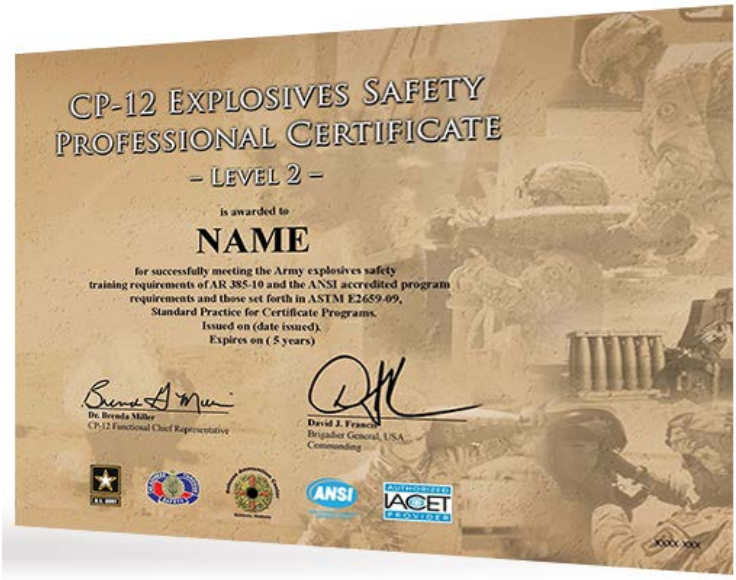
DAC course	Requirement	Mode	Duration
Army Electrical Explosives Safety, 4E-F33/645-F17 (DL) or 4E-F32/645-F16 (IL) (Ammo-28)	Mandatory	DL or IL	8 or 28 hours
Risk Management & Prep of SOPs for Ammo and Explosives, 9E-F68/920-F36 (DL) or 9E-F60/950-F39 (IL) (Ammo-54)	Mandatory	DL or IL	8 or 80 hours
Munitions History Program, 4E-F64/645-F48 (DL) (Ammo-97)	Mandatory	DL	4 hours
Application of U.S. Army ESQD Principles, 4E-F65/645-F49 (DL) (Ammo-99)*	Mandatory (or Ammo-82)	DL	24 hours
Army Explosives Safety Site Planning, 4E-F25/431-F9 (DL) (Ammo-100)*	Mandatory (or Ammo-82)	DL	16 hours
Ammunition and Explosives Storage Safety, 4E-F28/645-F12 (DL) (Ammo-112)	Mandatory	DL	8 hours
Advanced Explosives Safety Management Workshop Management Workshop (AESM)	Mandatory	IL	16 hours
Army Explosives Safety Deviations Workshop (previously DARAD workshop)	Mandatory	IL	4 hours

* The Army Explosives Safety Quantity Distance and Site Planning Course, 4E-F24/431-F8 (IL) (Ammo-82) (80 hours) is the equivalent to both Ammo-99 and Ammo-100. There are no other substitutions or equivalencies authorized other than Ammo-82 for Ammo-99 and -100. Previous experience will not replace completion of the above courses.

In addition to the initial training requirement, Level 2 program participants will be required to take AESM on a 5 year cycle to maintain their certificate.

CP-12 Explosives Safety Professional Certificate





ELIGIBILITY REQUIREMENTS »

ES Level 1 Certificate Eligibility »

All CP-12 SOH Professionals are eligible for the CP-12 ES Professional Certificate—Level 1. The certificate is also open to military and DoD civilian personnel who meet the requirements described in this handbook. The Army awards an ES Level 1 Certificate to individuals who meet the following minimum requirements:

- General SOH KSAs. The SOH KSAs required as a foundation for ES, include the ability to advise commands on ESM practices necessary to support the command's mission; conduct ES safety awareness meetings, training, and procedural reviews; respond to reports of hazards and other safety concerns; assess hazards and risks and develop countermeasures; monitor the implementation and effectiveness of safety controls; conduct accident trend analyses; and communicate and disseminate lessons learned. Possession of these KSAs is demonstrated by either:
  - Possession of the ANSI Accredited CP-12 SOH Professional Certificate, or
  - Approval of the appropriate Functional Proponent for CP-12 Safety Professionals in the 0081, 0690, 0803 or 1306 job series.

    Note: Documentation requirements for intern programs completed prior to 2009 are available through the CP-12 Functional Chief's Representative Cell at the U.S. Army Combat Readiness Center (USACRC). This documentation includes completion of Level I Skills currently required for the CP-12 Professional SOH Certificate.

Other applicants must meet these KSA requirements by obtaining the CP-12 Professional SOH Certificate.

- Completion of the following Defense Ammunition Center (DAC) courses:
  - Introduction to Ammunition
  - U.S. Army Explosives Safety Familiarization
  - Ammunition Publications
  - Introduction to Explosives Safety Management for Safety Professionals.

ES Level 2 Certificate Eligibility »

This ES Level 2 Certificate is open to military and DoD civilian personnel whose job responsibilities and activities primarily involve ESM and who meet the application requirements. The certificate, which is specifically designed for such careerists, is open to military and DoD civilian personnel who have significant ES responsibilities and meet the requirements described below:

- Possession of the CP-12 ES Professional Certificate—Level 1
- Completion of the following DAC courses:
  - Army Electrical Explosives Safety
  - Risk Management and Prep of SOPs for AE
  - Munitions History Program
  - Application of U.S. Army ESQD Principles
  - Army ES Site Planning
  - ES Storage Safety
  - Army ES Deviations Workshop (previously Deviation Approval and Risk Acceptance Document, or DARAD) Workshop
  - Advanced Explosives Safety Management (AESM) Workshop

- Because of the frequency with which ES policy, standards, and tools are updated or modified, the ES Level 2 Certificate has a 5 year renewal requirement. To maintain a current, valid ES Level 2 Certificate, careerists must successfully complete the AESM Workshop every 5 years.
- A copy of the AESM Program Certificate, the basic memo with the employee's information, and the ACOM/Army Service Component Command (ASCC)/Direct Reporting Unit (DRU) senior safety office endorsement should be forwarded to the ES Level 2 ES Professional Program Manager.

APPLICATION PROCEDURES »

ES Level 1 Certificate Procedures »

Applicant

Upon completion of the requirements necessary to achieve an ES Level 1 Certificate, the applicant should take the following steps to document satisfaction of ES Level 1 Certificate requirements and request consideration for award of an ES Level 1 Certificate):

- Collect applicable documentation
- Submit a memorandum to the ACOM/ASCC/DRU Safety Director requesting award of the ES Level 1 Certificate. The Safety Director reviews the application and associated documentation, validates that the applicant has met the requirements, and endorses the application. (The Certificate Training Program Plan provides a template for ES Level 1 Certificate procedures.)

ACOM / ASCC / DRU Safety Director

Upon receipt of the application, the Safety Director evaluates the application package and performs the following:

- If the applicant has satisfied ES Level 1 Certificate requirements, the Safety Director endorses the packet and forwards it by email to the CP-12 Functional Chief

Representative (FCR) at:
usarmy.rucker.hqda-secarmy.mbx.safe-explosives@mail.mil

- If deficiencies are identified, the Safety Director reviews and rectifies the deficiencies with the applicant before forwarding the complete packet to the CP-12 FCR.

CP-12 Functional Chief Representative (FCR)

Upon receipt of the application, the FCR holds the package for review by the CP-12 ES Professional Certificate—Level 1 Review Panel during a quarterly meeting. (The cut off for acceptance of application packets is three working days prior to the CP-12 Review Panel convening.)

- The Review Panel assesses the applications to ensure each applicant has met the requirements.
- The Review Panel, after reviewing and approving an application, emails a copy of the ES Level 1 Certificate to the applicant and the appropriate Safety Director.
- If an application does not provide documentation required to indicate that the applicant has met the ES Level 1 Certificate requirements, the Review Panel requests the applicant to provide the missing documentation. The applicant, the applicant's Safety Director, and the FCR are notified of such requests.
- For approved applications, the FCR enters the date of approval and the name of the certifying official into a historical record. This record is the authoritative source of approved ES Level 1 Certificates.

ES Level 2 Certificate Procedures »

Applicant

Upon completion of the requirements necessary to achieve an ES Level 2 Certificate, the applicant submits an application to the appropriate ACOM/ASCC/DRU Safety Director for endorsement. The applicant must submit the application by memorandum using the format on page 4 of the Level 2 Procedures. The application must include a copy of the CP-12 ES Professional Certificate—Level 1 and certificates or ATRRS transcripts for the courses listed in paragraph C.2 of the Level 2 procedures.

After collecting the required documentation, the applicant submits a memorandum requesting award of the ES Level 2 Certificate to the ACOM/ASCC/DRU Safety Director for endorsement and validation.

ACOM / ASCC / DRU Safety Director

Upon receipt of the application, the Safety Director evaluates the application package and performs the following:

- Ensures the application is complete and the applicant has fulfilled the ES Level 2 Certificate requirements.
- If the applicant has satisfied all ES Level 2 Certificate requirements, endorses the packet and forwards it by email to the CP-12 ES Level 2 manager at usarmy.rucker.hqda-secarmy.mbx.safe-explosives@mail.mil

If deficiencies in the application are found, the Safety Director reviews and rectifies the deficiencies with the applicant before forwarding the complete packet to the CP-12 Explosives Level 2 Manager. All discrepancies with the application package should be discussed with the applicant and rectified before forwarding to the CP-12 Explosives Level 2 Manager.

Explosives Safety Program Manager

Upon receipt, the ES Program Manager maintains the package for review by the CP-12 ES Professional Certificate—Level 2 Review Panel. The Review Panel is anticipated to convene in conjunction with the CP-12 ANSI Certificate

Panel and the Level 1 Explosives Safety Panel. Cutoff for acceptance of packets is three working days prior to the Review Panel convening.

Review Panel

The Review Panel assesses each application to ensure the ES 2 Certificate requirements have been met:

- After reviewing and approving the application, the Review Panel emails the CP-12 ES Professional Certificate—Level 2 to the applicant, with a copy provided to the appropriate ACOM/ASCC/DRU Safety Director. The certificate is then dated, with the five-year expiration date annotated.
- If the application does not provide the documentation required to indicate that the applicant has met the ES Level 2 requirements, the Review Panel notifies the applicant, the applicant's Safety Director, and the FCR of the discrepancy. The applicant then corrects the deficiency and resubmit the packet thru the ACOM/ASCC/DRU Safety Director to the CP-12 ES Level 2 manager.
- For approved applications, the FCR enters the date of approval and the name of the certifying official into a historical record. This record is the authoritative source of approved ES Level 2 Certificates The CP-12 ES Professional Certificate—Level 2 is then emailed to the applicant, with a copy provided to the appropriate ACOM/ASCC/DRU Safety Director. The certificate is then dated, with the 5 year expiration date annotated.

Renewal Requirements

To maintain a valid certificate, Level 2 Certificate holders must successfully complete the AESM Workshop within 5 years. The ES Level 2 Manager will not issue notifications of expiring certificates.

- Upon successful completion of the AESM Workshop, ES Level 2 Certificate holders should send a copy of the course completion certificate and a copy of the basic memorandum required

initially for approval of the ES Level 2 Certificate through their ACOM/ASCC/DRU Safety Director to the ES Level 2 Manager (FCR Cell) requesting an updated Level 2 Certificate.

- The Explosives Level 2 Program Manager issues a new CP-12 ES Professional Certificate—Level 2. The certificate will be emailed to the applicant, with a copy provided to the appropriate ACOM/ASCC/DRU Safety Director. The certificate will state the original issue date, the reissue date, and the new 5 year expiration date.

OTHER SPECIALIZED ES TRAINING

SECTION 5

U.S.ARMY

5 OTHER SPECIALIZED ES TRAINING

Competency development for personnel working in RDT&E, industrial, and tactical environments may require additional specialized ES training. The training is a position-specific requirement and not a formal part of the CP-12 ES Certificate Program. Table 5-1 describes those specialized training courses or workshops.

Table 5-1. Other Specialized Explosives Safety Training Descriptions

Course / Workshop	Description	Mode
Military Munitions Rule (MMR) (4E-F46/645-F30 (DL) (CERT) (Ammo-68)	Provides essential information to personnel involved in leading, supervising, managing, planning, or conducting any operation involving WMM. It instructs as to when military munitions may become waste, and provides methods to conduct WMM operations that are consistent throughout the DoD.	DL
Army Contract Safety Workshop	Covers legal requirements for incorporating contract safety elements into all Army contracted operations. It provides a comprehensive overview of safety implementation across pre- and post-award contract phases, including the roles and responsibilities of requiring activity, contracting, and safety personnel, and the development of key contract support documents.	IL
Contract AE Operations Safety Workshop	Focuses on developing and implementing contract safety practices and standards to support management and surveillance of contracted AE operations. It provides specific guidance and requirements for AE contract operations, including production, maintenance, storage, use of facilities, demil, and disposal.	IL
Explosives Safety in RDT&E and Industrial Environments Workshop	Reviews the fundamentals of energetic materials and explosives, their characteristics, and the fundamental ES safety considerations in RDT&E and industrial environments. It includes detailed coverage of Process Safety Management (PSM) and implementation in Army environments.	IL

Table 5-1. Other Specialized Explosives Safety Training Descriptions		
Course / Workshop	**Description**	**Mode**
DDESB Technical Paper (TP) 16, "Methodologies for Calculating Primary Fragment Characteristics"	Covers a suite of electronic tools: Fragmentation Database, Generic Equation Calculator (GEQ), Buried Explosion Module (BEM), Barricade Angle Calculator (BAC), Stacked Munition Article Calculator (SMAC), Jacobs-Roslund Calculator (JRC), and Modified-Pseudo Trajectory Normal Calculator (MPTNC). Although few personnel are required to calculate munition-specific fragment characteristics, these tools are widely used in the munitions response community and are becoming more widely used in the RDT&E community. The MPTNC is mostly used in the hazard classification community. This six-hour class is designed to teach the attendees suitable uses for each tool, how to use the tools, and how to interpret the output of the tools. The Fragmentation Database is published in.pdf format and an Access database format is available upon request from the DDESB. All of the other tools are Excel-based templates and may have macros embedded in them.	Webinar

EXPLOSIVES SAFETY SUPPORT

SECTION 6

U.S.ARMY

6 EXPLOSIVES SAFETY SUPPORT

This chapter provides Army SOH Professionals with a quick reference to help in the following ES areas

- Training
- Technical requirements
- Accident/incident support
- Communities of practice
- Mobile applications
- Key publications.

TRAINING »

- USACRC training site, provides information on the ES Professional Certificate Program including requirements and application procedures (under the CP-12 tab).

  https://safety.army.mil/

- Army Training Requirements and Resource System (ATRRS) site, including general information, ATRRS course catalog, training registration, and tracking and support.

  https://www.atrrs.army.mil/

- Army Learning Management System (ALMS) Help Desk for support with DL course access or performance.

  Via phone: 1-800-275-2872

- DAC training site, including course catalog, registration, and reporting requirements.

  http://www.dactces.org/

- DAC YouTube channel provides AE educational and demonstrational videos.

  http://www.youtube.com/user/DefenseAmmoCntr

TECHNICAL REQUIREMENTS »

- AmmoHelp, operated by the DAC LRTAO, is an application that allows users to ask questions on any aspect of A&E management, operations, and use. Responses are normally provided by subject matter experts within 24 hours and a final response within 5 working days. Questions may be submitted online at

  https://mhp.redstone.army.mil under the DAC drop down menu or by email to:

  usarmy.mcalester.usamc.list.dac-ammohelp@mail.mil

- Munitions History Program (MHP) application collects and stores inspection and test data, and tracks ammunition technical history quality assurance data. This system replaces the Depot Surveillance Record (DSR) card, including the Standard Depot System (SDS) and other systems now being used to collect field data. All organizations are required to use the MHP to maintain their DSR information where internet connectivity is available. Common Access Card (CAC) access is required. See the DAC tab at the following address:

  https://mhp.redstone.army.mil

- USACRC CP-12 SOH Site, including policy, safety professional tools, and training guidance.

  https://safety.army.mil/CP-12.aspx

- USATCES provides ES technical support, including information on accident investigation, site planning, hazard classification, and chemical agent safety. It also manages the Technical Library for ES. Via email:

  usarmy.mcalester.usamc.list.dac-es-personnel@mail.mil
  or phone: (918) 420-8807 or DSN: 956-8807

ACCIDENT/INCIDENT SUPPORT »

- *Army Accident Investigators Handbook* provides a concise, standard set of instructions and procedures to assist U.S. Army Accident Investigation Boards (centralized accident investigation [CAI] or installation-level accident investigation [IAI]).

  It is designed to be taken to the investigation site and used as a guide and data recording tool.

- Report It Loss Reporting System is the official Army accident reporting tool.

  https://reportit.safety.army.mil/

COMMUNITIES OF PRACTICE »

- The ES Ammunition Forum provides support to the ammunition community and all Service warfighters through the sharing of business artifacts, exchanging tacit knowledge, providing a reach-back capability, solving problems, aiding decision making, and generating organizational learning.

  https://acc.dau.mil/ammo

  https://www.dau.mil/community-hub

  (scroll down to Munitions and Explosives Safety)

- DAU Community of Practice fosters collaboration and information sharing among Soldiers, Army civilians, and authorized contractors.

  https://acc.dau.mil/ammo

  https://www.dau.mil/community-hub

MOBILE APPLICATIONS »

- *DAC Yellow* Book provides users in the field with a ready consolidated reference to basic data and regulatory criteria for hazard classification, physical security, marking, transportation, and storage of conventional AE.
- DAC *Ammo* Storage Compatibility Groups (SCG) is a system model that offers practice in storing ammo using SCGs.
- DAC *ESQD Mobile* is modeled after the ESQD Calculator Excel Spreadsheet. This application is used to calculate the hazard class and division (HD) 1.1 net explosive weight quantity distance (NEWQD) that can be stored in a PES.

KEY PUBLICATIONS »

DoD Issuances »

The official web site for DoD Issuances. Publications include catalogs, compendiums, directories, guides, handbooks, indexes, inventories, lists, modules, pamphlets, plans, regulations, series, standards, and supplements.

http://www.dtic.mil/whs/directives/corres/pub1.html

Army Regulations »

- AR 75-1, *Malfunctions Involving Ammunition and Explosives*. Provides guidance, instruction, and responsibilities for reporting malfunctions involving AE.
- AR 75-15, *Policy for Explosive Ordnance Disposal*. Prescribes DA EOD policies, responsibilities, and procedures.
- AR 190-11, *Physical Security of Arms, Ammunition and Explosives*. Prescribes standards and criteria for the physical security of sensitive conventional arms, ammunition, and explosives (AA&E), including non-nuclear missiles and rockets. It also prescribes policy, procedures, and standards, and assigns responsibilities for the effective implementation and application of physical security of AA&E.
- AR 385-10, *The Army Safety Program*. Addresses explosive safety, particularly in Chapter 5.
- AR 385-63/MCO 3570.1C, *Range Safety*. Provides range safety policy for the Army and Marine Corps. It is used in conjunction with DA PAM 385–63.
- AR 420-1, *Army Facilities Management*. Provides policies and responsibilities for conduct and management of facilities engineering, housing, fire and emergency services, and environmental support.

Army Pamphlets »

- DA PAM 385-1, *Small Unit Safety Officer/NCO Guide*. Provides guidance in applying policies and procedures and necessary information for managing a unit safety program.
- DA PAM 385-10, *Army Safety Program*. Establishes guidance, functions, policies, and procedures for the Army Safety Program.
- DA PAM 385-30, *Risk Management*. Provides guidance to assist users in implementing and integrating mishap risk management into all phases of Army operations.
- DA PAM 385-40, *Army Accident Investigations and Reporting*. Provides accident and reporting procedures for various types of incidents to include explosives.
- DA PAM 385-61, *Toxic Chemical Agent Safety Standards*. Describes the minimum safety criteria, guidance, and procedures for use in processing, handling, storage, transportation, disposal, and decontamination of chemical agents, and updates Army guidance and implementing procedures for conducting chemical agent safety program IAW with AR 385-10.
- DA PAM 385-63, *Range Safety*. Establishes minimum requirements for Army and Marine Corps range safety programs. It also establishes standards and procedures for safe firing of ammunition, demolitions, lasers, guided missiles, rockets, and bombs.
- DA PAM 385-64, *Ammunition and Explosives Safety Standards*. Prescribes Army policy on AE (military munitions) safety standards, and implements the requirements of DoD 6055.09-M.
- DA PAM 385-65, *Explosive and Chemical Site Plan Development and Submission*. Contains Army Safety Program implementation guidance.

- DA PAM 710-7, *Hazardous Material Management Program*. Provides standard Army practices for the centralized control and management of hazardous material.

Army Training Circulars »

Training Circular (TC) 25-8, *Training Ranges*. Serves as the primary guide for installation Range Development Plan (RDP) and for developing the Army Master Range Plan (AMRP).

Army Techniques Publications (ATPs) »

- ATP 4-02.85, *Multiservice Tactics, Techniques, and Procedures for Treatment of Chemical Agent Casualties and Conventional Military Chemical Injuries.* Provides multi-service tactics, techniques, and procedures (MTTP) and is designed for use as a reference for trained members of the Armed Forces Medical Services and other medically qualified personnel on the recognition and treatment of chemical agent casualties and conventional military chemical injuries.
- ATP 4-32*, Explosive Ordnance Disposal Operations*. Provides doctrinal guidance for explosive ordnance disposal procedures.
- ATP 4-32.16, *Multi-Service Tactics, Techniques and Procedures for Explosives Ordnance Disposal*. Describes why EOD forces are an important part of the combined arms team throughout all phases of full spectrum operations and prescribes responsibilities for EOD forces in support of the Army, Joint Force, and subordinate commanders.
- ATP 4-35, *Munitions Operations and Distributions Techniques*. Focuses on all phases of munitions operations and distribution from theater opening through theater closing.
- ATP 4-35.1, *Ammunition and Explosives Handler Safety Techniques*. Prescribes doctrine on munitions handling techniques for all munitions handlers in the Army regardless of assignment or military occupational specialty. It is intended to

provide greater emphasis on ES during all munitions handling operations.

- ATP 5-19, *Risk Management*. Provides doctrinal guidance on managing risk within the conduct of operations.

DoD Directives »

- Department of Defense Directive (DoDD) S-3325.01, *Foreign Materiel Program (FMP)*. Describes DoD policies and procedures for managing and handling foreign munitions and explosive materials.
- DoDD 4715.1E, *Environment, Safety, and Occupational Health (ESOH)*. Establishes policies on ESOH to sustain and improve the DoD mission.
- DoDD 4715.11, *Environmental and Explosives Safety Management on Operational Ranges Within the United States*. Establishes policy for use and management of operational ranges within the United Sates and describes protection of DoD personnel and the public from explosive hazards.
- DoDD 4715.12, *Environmental and Explosives Safety Management on Operational Ranges Outside the United States*. Establishes policy for use and management of operational ranges outside the United States and describes protection of DoD personnel and the public from explosive hazards.
- DoDD 5101.13E, *DoD Executive Agent for the Unexploded Ordnance Center for Excellence (UXOCOE)*. Establishes policies and assigns responsibility for centralized coordination for unexploded ordnance.
- DoDD 5160.62, *Single Manager Responsibility for Military Explosive Ordnance Disposal Technology and Training (EODT&T)*. Provides policies and responsibilities for EODT&T.
- DoDD 5160.65, *Single Manager for Conventional Ammunition (SMCA)*. Provides policies and responsibilities for the SMCA.

- DoDD 6055.9E, *Explosives Safety Management (ESM)*. Updates policies, authorities, and responsibilities for DoD ESM and authorizes the DoD Explosives Safety Board (DDESB) as a standing joint board.

DoD Regulations »

DoD 4500.9-R, *Defense Transportation Regulation*, Chapter 205, "Transportation Protective Services (TPS)." Provides direction and procedures for transporting conventional arms, ammunition, and explosives (AA&E). See also the *Military Freight Traffic Unified Rules Publication–1,* which provides specific rules and responsibilities for the transport of munitions.

DoD Instructions »

- Department of Defense Instruction (DoDI) 4140.62, *Material Potentially Presenting an Explosive Hazard (MPPEH)*. Provides DoD instruction, policy, and responsibilities for the management and disposition of material potentially presenting an explosive hazard.
- DoDI 4145.26, *DoD Contractor's Safety Requirements for Ammunition and Explosives*. Provides guidance for implementing safety compliance responsibilities and authority.
- DoDI 5100.76, *Safeguarding Sensitive Conventional Arms, Ammunition, and Explosives (AA&E)*. Establishes policy and responsibilities for uniform, worldwide standards for security of conventional AA&E.
- DoDI 5160.68, *Single Manager for Conventional Ammunition (SMCA): Responsibilities of the SMCA, the Military Services, and the United States Special Operations Command (USSOCOM)*. Specifies functional responsibilities and mission functions.
- DoDI 6055.01, *DoD Safety and Occupational Health (SOH) Program*. Provides policies, procedures, and responsibilities for administering a comprehensive DoD SOH program.

- DoDI 6055.16 w/Change 1, *Explosives Safety Management Program*. Prescribes procedures for the operation of the DoD ESMP for DoD military munitions and military toxic agents.

DoD Manuals »

- DoD 4145.26-M, *DoD Contractor's Safety Manual for Ammunition and Explosives*. Contains the minimum contractual safety requirements to support DoD A&E operations and objectives.
- DoD 4160.28-M, Volumes 1 through 3, (*Defense Demilitarization: Volume 1 Program Administration, Volume 2 Demilitarization Coding, and Volume 3 Procedural Guidance)*.
- DoD 5100.76-M, *Physical Security of Sensitive Conventional Arms, Ammunition, and Explosives (AA&E)*. Provides physical security guidance for the protection of DoD sensitive conventional AA&E.
- DoD 6055.09-M, *DoD Ammunition and Explosives Safety Standards*, Volumes 1 through 8. Establishes ES standards for DoD.

Joint or Multi-Service Regulations »

1. Army Regulation 75-14; OPNAVINST 8027.1G; MCO 8027.1D; AFR 136-8, *Inter-Service Responsibilities for Explosive Ordnance Disposal*. Delineates the explosive ordnance disposal (EOD) responsibilities of the Army, Marine Corps, Navy, and Air Force.
2. AR 385-63/MCO 3570.1C, *Range Safety*. Provides range safety policy for the Army and Marine Corps including establishment of range safety programs, risk management principles, and deviation authorities.
3. CJCSI 4360.01A; *Explosives Safety and Munitions Risk Management for Joint Operations Planning, Training, and Execution*. Establishes policies and practices for integrating Explosives Safety and Munitions Risk Management (ESMRM) in the Joint Operation Planning Process to

facilitate planning in support of the full spectrum of operations during peacetime and wartime periods.

Soldier's Manuals »

STP 9-55B12-SM-TG and STP 9-55B34-SM-TG, *Soldiers Manual and Trainer's Guide, MOS 55B, Ammunition Specialist, Levels 1 through 4*.

Handbooks »

Tactical Explosives Safety Quick Reference Guide, Revision 7, USATCES, March 2016.

DDESB Technical Papers »

DDESB Website: https://ddesb.altess.army.mil/

Table 6-1. DDESB Technical Papers

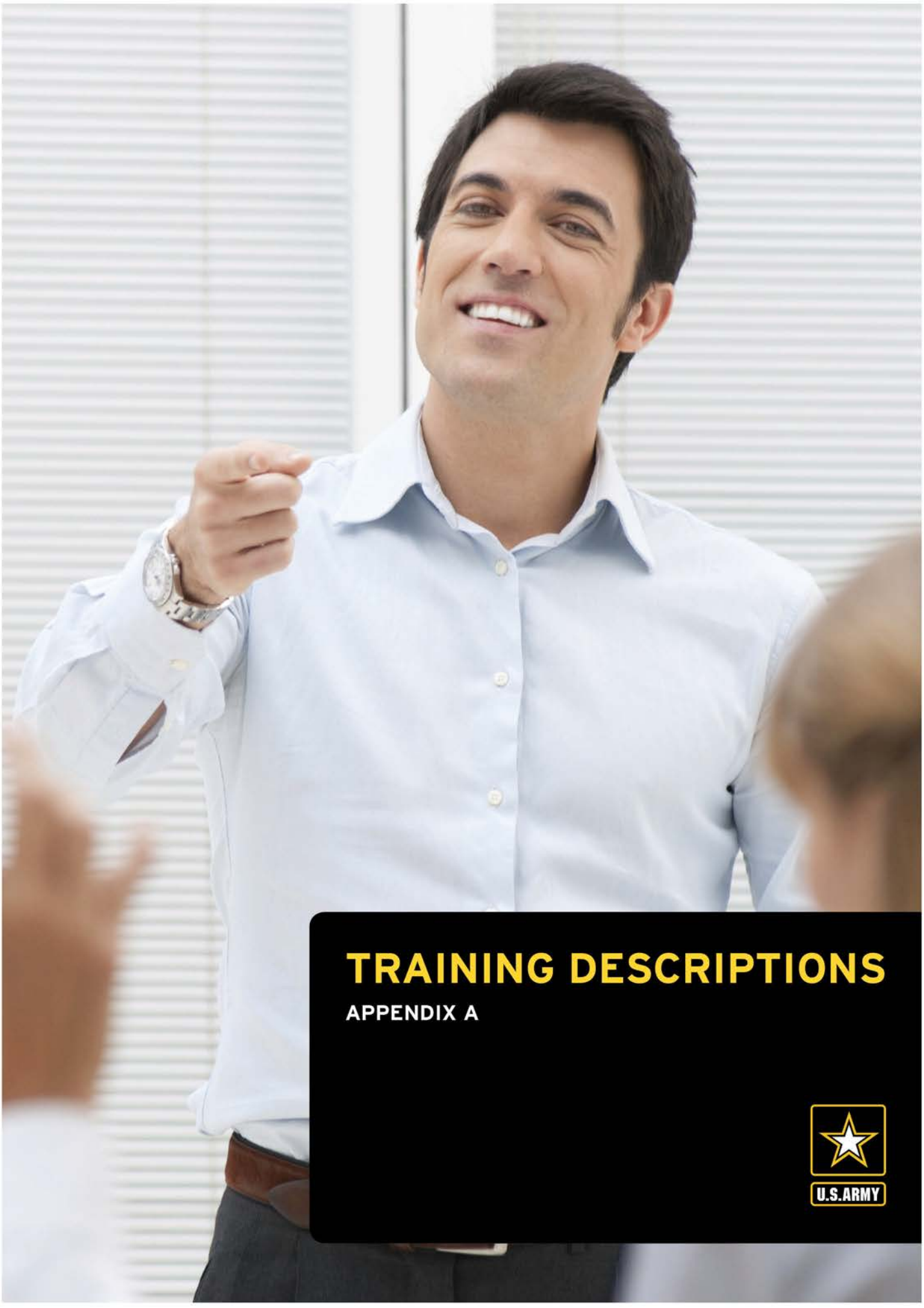
Number	Description
TP10	METHODOLGY FOR CHEMICAL HAZARD PREDICTION June 1980. This document describes an atmospheric-diffusion model for calculating hazard-distances associated with chemical accidents or incidents for emergency-planning purposes. Background, experience, and judgment are required in the responsible employment of these methods. That judgment is required to determine source parameters, to use the meteorological input parameters, and to apply the model to situations involving changing meteorological environments. Integrity of the results obtained will reflect the users understanding of the physical processes, models, methods and, when utilized, computer programs.
TP12	FRAGMENT AND DEBRIS HAZARD This paper, prepared by the Technical Programs Division of the DoD Explosives Safety Board, presents a brief review of selected concepts involved in characterizing the hazards of fragment-producing ammunition.

Table 6-1. DDESB Technical Papers	
Number	**Description**
TP13	PREDICTION OF BUILDING DEBRIS FOR QUANTITY-DISTANCE SITING Presents an analytical model for predicting hazardous building debris distances for accidental explosions within explosives material operations buildings. The model was developed for the U.S. Department of Energy (DOE) Safety Office under funding by DOE and the U.S. Department of Defense Explosives Safety Board (DDESB). The model provides an approved method for determining siting distances for explosive loading conditions and building construction types most common to DOE and DoD facilities.
TP14	APPROVED METHODS AND ALGORITHMS FOR DOD RISK-BASED EXPLOSIVES SITING, Revision 4, 21 July 2009—In 1997 The Department of Defense Explosives Safety Board (DDESB) recognized the need to develop a risk-based approach for explosives safety analysis and chartered the Risk-Based Explosives Safety Criteria Team (RBESCT) to develop such an approach. The result of that effort was the Safety Assessment for Explosives Risk (SAFER) tool, which is based on the methods and algorithms documented in Technical Paper (TP) 14.
TP15	APPROVED PROTECTIVE CONSTRUCTION This DDESB Technical Paper provides a comprehensive listing of AE storage facilities and protective construction facilities and features that have been designed and built over the past 70 years. Its purposes are to: (1) educate and enhance from an historical perspective, an understanding of how criteria developed and were influenced; and (2) document approved protective construction designs to provide the ES community common information for their use and benefit.
TP16 (Secure Login)	METHODOLOGIES FOR CALCULATING PRIMARY FRAGMENT CHARACTERISTICS This Technical Paper, Revision 5, provides Department of Defense Explosives Safety Board (DDESB) approved methodologies for calculating the characteristics of primary fragments. It includes methodologies for calculating: primary fragment mass and velocity, maximum fragment range, hazardous fragment distance, effects of detonating stacks of items, effects of detonating buried items, and penetration information. This paper is kept current and will be updated as new methodologies are developed.

Table 6-1. DDESB Technical Papers	
Number	**Description**
TP16 Tools Class Announcement	This class is designed to teach professionals suitable uses for each tool, how to use the tools, and how to interpret the output of the tools. The Fragmentation Database is published in.pdf format and Access database format is available upon request from the DDESB. All of the other tools are Excel-based templates and may have macros embedded in them.
TP17 (Secure Login)	DDESB BLAST EFFECTS COMPUTER VERSION 6 USER'S MANUAL AND DOCUMENTATION This Technical Paper, Revision 2, provides documentation and a user's guide for the Department of Defense Explosives Safety Board (DDESB) Blast Effects Computer (BEC), Version 6. The DDESB has had an active role in producing various explosion effects computation aids for over 25 years. The latest version of the BEC is a template for an Excel spreadsheet.
TP18	MINIMUM QUALIFICATIONS FOR PERSONNEL CONDUCTING MUNITIONS AND EXPLOSIVES OF CONCERN-RELATED ACTIVITIES This document provides the minimum qualification standards for personnel performing munitions and explosives of concern-related activities in support of the DoD except for DoD Explosives Ordnance Disposal (EOD) personnel. Munitions and explosives of concern (MEC) activities include munitions responses to MEC, operational range clearance-related activities, or other operations involving intentional physical contact with MEC.
TP19	USER'S REFERENCE MANUAL FOR THE SAFETY ASSESSMENT FOR EXPLOSIVES RISK SOFTWARE, Revision 1, 21 July 2009 This Reference Manual is a user's guide for Version 3.1 of the SAFER software. SAFER is the DDESB's risk-based explosives siting software system. (See TP14 above for a description of the methods and algorithms used in the SAFER model.) For additional information and guidance, see (1) Safer Software workbook step by step guide (included as attachment in TP19), and (2) Safer Frequently asked questions (Included as attachment in TP19).

Table 6-1. DDESB Technical Papers	
Number	**Description**
TP21	PROCEDURES FOR THE COLLECTION, ANALYSIS, AND INTERPRETATION OF EXPLOSION-PRODUCED DEBRIS—REVISION 1 This Technical Paper provides Department of Defense Explosives Safety Board (DDESB) guidance and recommendations for the collection and analysis of explosion produced debris. It is a revision of a NATO document, NATO AC/258-D/462, first published in 1999. Because this document is derived from a NATO document, the International System of Units (SI) is used throughout. This paper will be kept current and will be updated as new methodologies are developed.
TP22 (Secure Login)	TECHNICAL PAPER 22 It provides Department of Defense Explosives Safety Board (DDESB) guidance for the installation and maintenance of lightning protection systems for ammunition and explosives facilities. Its primary focus is to clarify the lightning protection requirements outlined in Chapter 7, DoD 6055.09-STD, and the National Fire Protection Association 780 Standard for the Installation of Lightning Protection Systems. It outlines some basic principles of lightning phenomena, specific types of lightning protection systems, minimum design criteria, and maintenance requirements. The paper also presents guidance for a risk acceptance process when facilities cannot meet the lightning protection requirements outlined. It will be kept current and will be updated as new technologies are developed.
TP23	ASSESSING EXPLOSIVE SAFETY RISKS, DEVIATIONS, AND CONSEQUENCES This paper provides the Department of Defense Explosives Safety Board (DDESB) six-step process for Explosives Safety Risk Management (ESRM). It includes the Office of Management and Budget's Principles of Risk Management, a comparison of all four Service's Risk Management processes, and details a tool (Automated Safety Assessment Protocol–Explosives (ASAP-X)) for use in assessing consequences associated with explosive hazards. This paper and the latest version of the ASAP-X is an Excel spreadsheet and will be kept current and will be updated as new methodologies are developed.

Table 6-1. DDESB Technical Papers	
Number	**Description**
TP26 (Secure Login)	TECHNICAL PAPER 26 This paper provides Department of Defense Explosives Safety Board (DDESB) guidance for explosives safety site plans. It elaborates on the site plan requirements outlined in Department of Defense Instruction 6055.16, “Explosives Safety Management Program,” July 29, 2008, and DoDM 6055.09-M, “Department of Defense (DoD) Ammunition and Explosives Safety Standards,” Volumes 1–8, date varies by volume. The intent of this guidance is to support site plan preparation and facilitate efficient review at all levels.
TP27	TECHNICAL PAPER 27 This paper provides Department of Defense Explosives Safety Board (DDESB) guidance for implementing and managing an Explosives Safety Training Program. Department of Defense (DoD) Directive 6055.9E, “Explosives Safety Management and the DoD Explosives Safety Board,” requires DoD Components to ensure Service Career Programs (CPs) develop personnel qualified to serve as explosives safety management (ESM) subject matter experts (SMEs).



TRAINING DESCRIPTIONS

APPENDIX A

U.S.ARMY

A TRAINING DESCRIPTIONS

This appendix provides summary descriptions for all courses and workshops that compose the CP-12 ES Certificate Program. The appendix also provides course and workshop descriptions for specialized training in research, development, test, and evaluation, and industrial ES.

Explosives Safety Certificate (Level 1) Training

Competency development at Level 1 is accomplished through a series of mandatory DL and IL courses specific to explosives safety functions. Level 1 training descriptions are presented in Table A-1.

Table A-1. Explosives Safety Level 1 Training Descriptions

Course/Workshop	Description	Mode
Introduction to Ammunition 9E-F67/920-F35 (DL) (Ammo-45)	Provides basic training in the safety and fundamental technical aspects of AE including characteristics of AE, safe handling procedures, and ES requirements for the receipt, storage, maintenance, demil, and issue of ammunition at U.S. Army installations.	DL
U.S. Army ES Familiarization 4E-F44/645-F28 (DL) (Ammo-63)	Covers four major topic areas regarding explosives safety: • Characteristics of propellant and explosives • Hazard classification • Quantity distance • General safety practices including fire prevention, facilities requirements, storage principles, SOPs, and hazard analysis.	DL
Ammunition Publications 4E-F62/645-F46 (DL) (Ammo-78)	Describes the various publications used by all Services within DoD; provides familiarization in the purpose, content, and format of DoD, Army, Air Force, and Navy publications.	DL

Table A-1. Explosives Safety Level 1 Training Descriptions		
Course/Workshop	**Description**	**Mode**
Introduction to ES Management for Safety Professionals 4E-F26/431-F10 (DL) or 4E-F30/645-F14 (IL) (Ammo-107)	Prerequisite is successful completion of Ammo 45, Ammo 63, and Ammo 78; covers the broad scope of ES competency areas, including Army ESPM, explosives materials, non-standard ammunition, A&E accidents and incidents, emergency response, A&E transportation and storage, electrical safety, site planning, and licensing.	DL or IL

Explosives Safety Certificate (Level 2) Training

Competency development at Level 2 is accomplished through a series of mandatory DL and IL courses and workshops specific to explosives safety. This training scheme is designed to ensure CP-12 personnel with an ES role or responsibilities have the knowledge and working ability necessary to support the Army's explosives safety mission. Level 2 training descriptions are presented in Table A-2.

Table A-2. Explosives Safety Level 2 Training Descriptions		
Course/Workshop	**Description**	**Mode**
Army Electrical Explosives Safety or 4E-F33/645-F17 (DL) or 4E-F32/645-F16 (IL) (Ammo-28)	Provides specialized safety training for safety inspectors, engineering personnel, technicians, and contractors involved in maintaining, testing, inspecting, documentation, and other electrical safety aspects that apply to facilities that conduct operations involving AE.	DL or IL
Risk Management and Preparation of SOPs for Ammunition and Explosive Operations 9E-F68/920-F36 (DL) or 9E-F60/950-F39 (IL) (Ammo-54)	Covers the preparation and review of AE SOPs in accordance with DoD, DA, and AMC regulatory requirements; includes a broad overview of hazard analysis and RM as it relates to AE.	DL or IL
Munitions History Program (MHP) 4E-F64/645-F48 (DL) (Ammo-97)	Provides extensive information to successfully navigate within the MHP website, retrieve DSRs, and create new inspection records and data record headers.	DL

Table A-2. Explosives Safety Level 2 Training Descriptions		
Course/Workshop	**Description**	**Mode**
Application of U.S. Army ESQD Principles 4E-F65/645-F49 (DL) (Ammo-99)	Covers the application of explosives QD principles to provide the minimum required levels of protection to facilities, material, and personnel; includes discussion on the various levels of protection, expected damage effects at each level, and interpretation of textual and tabular instructions for determining minimum separation distances or explosives limits; includes discussion on the use of protective construction.	DL
U.S. Army Explosives Safety Site Planning Course 4E-F25/431-F9 (DL) (Ammo-100)	Covers the types of information and documentation needed to successfully submit preliminary and final ESPs; includes the transmittal letter, location and site maps, ESQD considerations, coordination with all appropriate installation activities, construction requirements, PES/ES QD paired relationships with the facilities being sited, and the approval process.	DL
Ammunition and Explosives Storage Safety 4E-F28/645-F12 (DL) (Ammo-112)	This course is a certification course in accordance with AR 385-10/DA PAM 385-64. It is designed to instruct safety professionals in the use and application of governing regulations and procedures for the safety of AE in storage. Includes coverage of storage facilities, safety, drawings and planographs, as well as administrative documentation applications.	DL
Advanced Explosives Safety Management (AESM) workshop	This workshop provides guidance on the development, implementation, and evaluation of Army ESMPs. It covers requirements across 16 ESMP program elements (including staffing, facilities conformance, emergency response, risk management, site planning, and training). Also provides detailed guidance on command relationships and responsibilities, and the role of safety personnel in ESMP implementation and coordination.	IL

Table A-2. Explosives Safety Level 2 Training Descriptions		
Course/Workshop	**Description**	**Mode**
Deviation Approval and Risk Acceptance Document (DARAD) workshop	This workshop provides detailed guidance on DARAD generation, routing and approval including the use of waivers, exemptions, and Secretarial Certificates. It covers ES deviation determination, justification, and submission requirements and processes. Also addresses the role of risk management including hazard determination, residual risk, and controls.	IL

EXPLOSIVES SAFETY MANAGEMENT PROGRAM

APPENDIX B

U.S.ARMY

B EXPLOSIVES SAFETY MANAGEMENT PROGRAM

This Smart Card provides a ready-reference to the Army Explosives Safety Management Program (ESMP) elements and responsibilities.

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

Explosives Safety Management Program

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807, DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil

ESMP is a Management Tool

- Specifies explosives safety roles and responsibilities for all organizations with AE missions, *regardless of size*
- Covers safety of AE during production, storage, use, handling, transportation, DEMIL, and disposal

ESMPs help ensure...

- Stakeholders coordinate on essential elements of explosives safety
- Risks are identified, assessed, mitigated, and accepted
- Deviations are approved at authorized levels IAW ***DA PAM 385-30, Table 4-1***
- Safety is maximized at all times

ESMP is a Senior Commander (SC) Program

- SC establishes the overarching installation ESMP
- ESMPs of subordinate or associated activities, including tenants, must support the SC's master ESMP
- Contractor plans must also be integrated

What publications guide ESMPs?

- ***AR 385-10***, Army Safety Program
- ***DA PAM 385-64***, Ammunition and Explosives Safety Standards
- ***DA PAM 385-65***, Explosives and Chemical Site Plan Development and Submission
- ***DA PAM 385-30***, Risk Management
- ***ATP 5-19***, Risk Management
- ***ATP 4-35.1***, Munitions Handlers' Safety Techniques
- ***ESMP Commander's Quick Reference Guide***

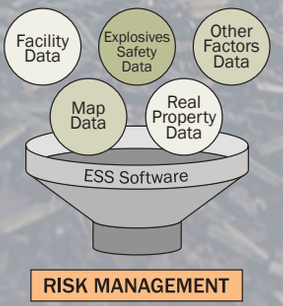
Is your ESMP complete?

- ***AR 385-10*** specifies the elements of an ESMP:

Organization & Staffing	Site Planning	Facilities Conformance	Emergency Response
Master Planning	Ranges	Contractors	Accident Prevention
DEMIL / Destruction	Risk Management	Tenants	Facility Maintenance
Explosives Safety Issuances	Records Management	Inspections, Evaluations, & Audits	Training

What ESMP support tools are available?

- **Explosives Safety Software (ESS)**
- **Safety Assessment for Explosives Risk (SAFER)**
- **Automated Safety Assessment Protocol — Explosives (ASAP-X)**
- **Explosives Hazard Assessment (HAZX)**



Are personnel adequately trained?

- Personnel directing, supervising, planning, or performing AE-related functions must be trained IAW **Figure 1-1**, ***DA PAM 385-64***
- Functional training on explosive ordnance disposal (EOD), AE transportation, and fire suppression
- Specific training on unexploded ordnance (UXO) and munitions and explosives of concern (MEC)
- Tenant ESMP ES training should satisfy installation requirements and be based on their mission Hazard Analysis (HA)

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

Explosives Safety Management Program

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807, DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil

Staffing & Organization

SENIOR COMMANDER (SC)
Establish SC's ESMP

↓

SAFETY POINT OF CONTACT (SPOC)
Oversee SC's ESMP

↓

SUBORDINATE COMMANDS

GARRISONS

TENANTS

CONTRACTOR OPERATIONS

AGENCIES

ACTIVITIES WITH AE MISSIONS
Subordinate ESMPs

Senior Commander Roles & Responsibilities

- Appoint qualified personnel to oversee the ESMP, including working site plans, safety submissions, AE facility designs, and risk assessments
- Ensure subordinate and tenant activities have prepared ESMPs and master plans that are synchronized with the installation ESMP and compliant with ES requirements
- Maintain awareness of *all* explosives safety deviations for the installation (see ***DA PAM 385-30***)
- Support training requirements for AE-related functions and ensure personnel receive ES training as required by policy and standards
- Ensure inspections/audits of AE activities are conducted to ensure compliance with installation and activity ESMP, ***AR 385-10***, and ***DA PAM 385-64***
- If OCONUS, conduct coordination of AE operations IAW ***CJCSI 4360.01A***

Safety POC Roles & Responsibilities

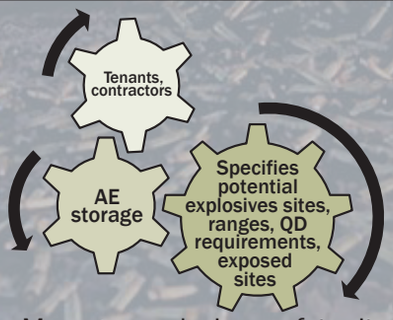
- Communicate with the SC directly and often
- Establish, manage, and direct the ESMP
- Serve as the primary POC for all ESMP-related actions
- Ensure all deviations are accurate/current
- Investigate, analyze, and report *all* mishaps
- Manage Unit ES training and ensure compliance
- Conduct evaluations to assess ESMP compliance and effectiveness

ESMPs Require Written Procedures

Require written procedures for *all* AE operations to ensure personnel have the information necessary to perform tasks safely (***AR 385-10***)

- Must address the development, review, and approval of ES policy, directives, risk assessments, and SOPs
- Define roles and procedures for accident prevention, investigation, and reporting
- Require pre-accident plans and SOPs based hazard analysis and risk assessments

ESMP Formalizes Site Planning

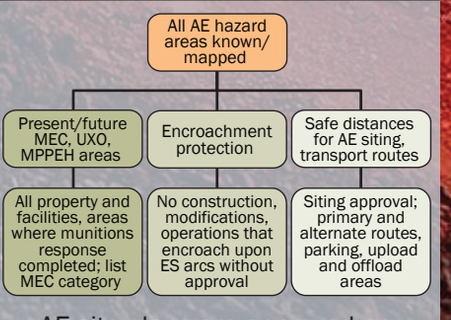


- Manages explosives safety site plan (ESSP) initiation, review, approval, and currency

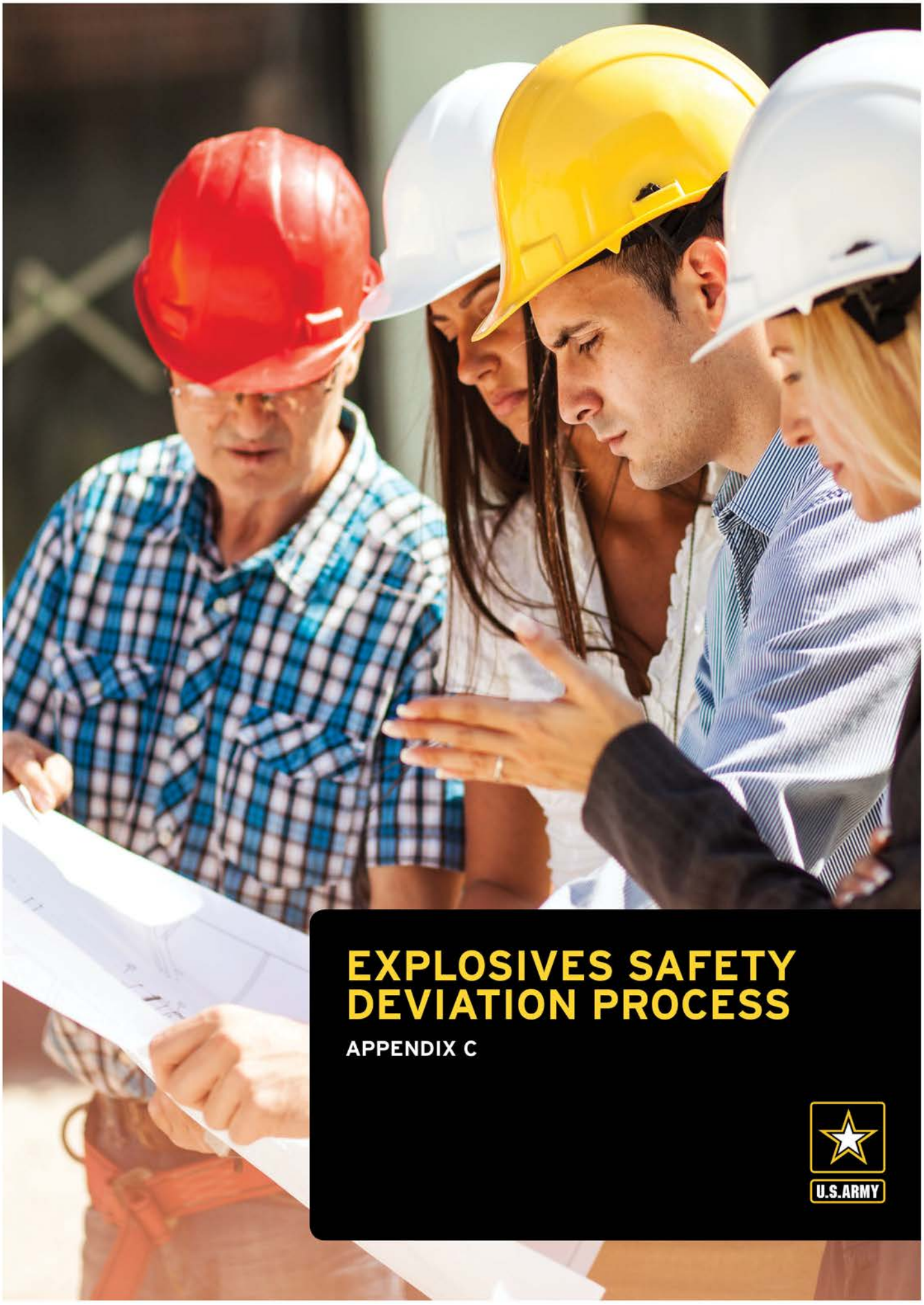
Are your facilities in conformance?

- Modifications and new facilities are properly sited and approved
- Compliance with design and construction standards (fire-walls, electrical systems, fire and lightning protection)
- Maintenance plans, schedules, and inspections are adequate and being followed
- Maintenance is performed *only* by trained, authorized personnel
- See ***DA PAM 385-64***

Does your ESMP support real property master planning?



- AE site plans are approved per ***DA PAMs 385-64*** and ***385-65***
- **See ESMP Development Guide**



EXPLOSIVES SAFETY DEVIATION PROCESS

APPENDIX C

U.S.ARMY

C EXPLOSIVES SAFETY DEVIATION PROCESS

This Smart Card provides a ready-reference to the Army Deviation Approval and Risk Acceptance (DARAD) document (DA Form 7632) and process.

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

U.S. ARMY EXPLOSIVES SAFETY DEVIATION PROCESS

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807 or DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil

Send approved AE or Chemical copies to the US Army Technical Center for Explosives Safety (USATCES) at: usarmy.mcalester.usamc.list.dac-es-personnel@mail.mil

What is a DARAD?

- ***DA Form 7632*** is an automated form for documenting risk management and acceptance
- **Mandatory for deviations from AE or chemical agent safety standards**
- Intentional deviations from standards ***MUST*** document:
  - *specific levels of associated initial and residual risk*
  - *policy/standard from which the operation will deviate*
  - *control measures*
  - *required level of risk acceptance per **DA PAM 385-30***

Guiding Principles

- Cardinal Rule of Explosives Safety
  - ***expose the minimum number of people to the minimum quantity of explosives for the minimum amount of time***
- Use quantitative and qualitative assessment tools to support risk decisions
  - *ES assessment tools and criteria provide critical decision-making aids*
- Reduce or eliminate risks to the maximum extent possible

Commander Roles & Responsibilities

- Establish command's overall risk tolerance and make final risk decisions
  - *cannot ignore Federal, state, or local law when seeking deviations*
- Determine how controls are implemented, performed, and evaluated for effectiveness
- Establish or implement Senior Commander's (SC) ESMP to define processes and ensure compliance
- ***Holds ultimate responsibility and must acknowledge risk prior to its acceptance IAW DA PAM 385-30, Table 4-1***

When must you use a DARAD?

- An ES deviation is ***any*** departure from policy requirements defined in ***AR 385-10*** and supporting pamphlets
- ***DA Form 7632*** must be used when intentionally deviating from AE and chemical agent safety standards
- Safety offices must track and review all approved deviations; copies of deviations and annual review must be provided to USATCES
- Deviations that do not involve AE or chemical agents may also utilize ***DA Form 7632***

What is the DARAD form structure?

Page 1: Information for Approval of Deviation

- Information necessary for decision on acceptance of risk and deviation approval by proper authority
- Includes *location* and *violation information,* and *deviation approval/risk acceptance documentation*

Page 2: Risk Assessment Documentation Worksheet

- Documents identification, characterization, analysis, and prioritization of hazards for risk mitigation

Page 3: Ammunition and Explosives Worksheet

- Mandatory for AE or chemical agent deviations
- Documentation of potential explosion site (PES), ESs, and potential consequences from incident

* Pages 2&3 should be completed before Page 1

What publications guide the ES deviation process?

- ***AR 385-10***, Army Safety Program
- ***DA PAM 385-30***, Risk Management
- ***DA PAM 385-61***, Toxic Chemical Agent Safety Standards
- ***DA PAM 385-64***, Ammunition and Explosives Safety Standards
- ***CJCSI 4360.01A***, Explosives Safety and Munitions Risk Management for Joint Operations Planning, Training, and Execution

What is Risk Management (RM)?

- Required, routine process for mitigating risks to personnel, property, and mission execution through decisions based on sound judgement
- Engaged leaders and standardized techniques, tools, and procedures are critical for success
- Principles of RM:

Integrate into ALL Phases of Operation	Make Risk Decisions at the Appropriate Level	Accept NO Unnecessary Risk	Apply RM Cyclically and Continuously

For support, contact USATCES at: usarmy.mcalester.usamc.list.dac-es-personnel@mail.mil or (918) 420-8807 or DSN: 956-8807

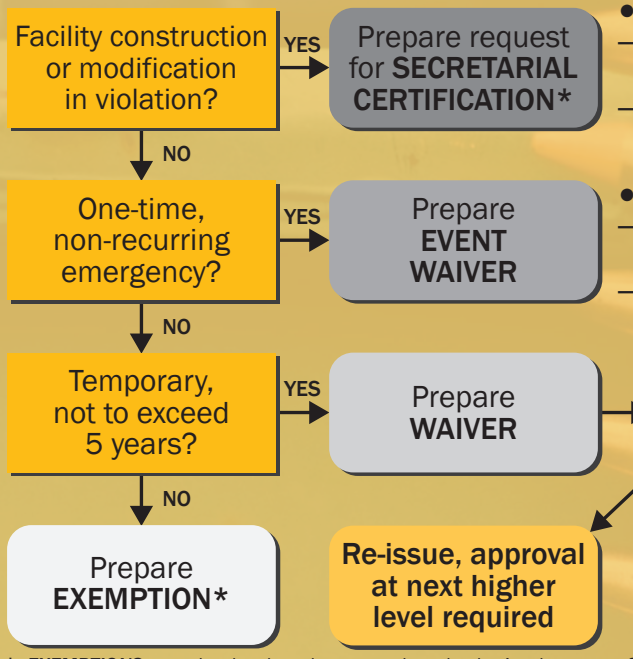
Deviation Approval and Risk Acceptance Document (DA Form 7632) can be found at: http://www.apd.army.mil/pub/eforms/pdf/A7632.pdf

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

U.S. ARMY EXPLOSIVES SAFETY DEVIATION PROCESS

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807 or DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil

Types of Deviations & Deviation Determination Process



- **SECRETARIAL CERTIFICATES**
  - *Required to expend resources for construction or modification of facilities in violation of AE or chemical safety regulations*
  - *An **EXEMPTION** approval must be obtained prior to, and submitted with, the Secretarial Certification Package*
- **EVENT WAIVERS**
  - *Temporary exceptions for one-time emergency situations NTE 1 month; not applicable to recurring missions*
  - *SC must approve event prior to onset of operations IAW the ESMP*
- **WAIVERS**
  - *Temporary deviations NTE 5 years*
  - *AE waivers reviewed annually; reviews of non-AE and chemical waivers NTE 2 years*
- **EXEMPTIONS**
  - *Permit long-term/permanent deviations*
  - *AE exemption review period NTE 5 years*
  - *Required for Secretarial Certification for long-term monitoring*

* ***EXEMPTIONS*** *must be developed, approved, and submitted as part of the Certification Package to be approved by the Assistant Secretary of the Army for Installations, Energy, and Environment (ASA (IE&E))*

The Risk Management Cycle (*ATP 5-19*)

- RM is a 5-step systematic, cyclical process of identifying and assessing hazards, then mitigating the associated risks
- Requires completion of ***DD Form 2977***, Deliberate Risk Assessment Worksheet

Risk Assessment and Acceptance (*DA PAM 385-30, Tables 3-3 and 4-1*)

Army Risk Assessment Matrix *(TABLE 3-3)*

SEVERITY (expected consequences)	PROBABILITY (expected frequency)				
	Frequent (A)	Likely (B)	Occasional (C)	Seldom (D)	Unlikely (E)
Catastrophic (I)	EH	EH	H	H	M
Critical (II)	EH	H	H	M	L
Moderate (III)	H	M	M	L	L
Negligible (IV)	M	L	L	L	L

EH - Extremely High Risk H - High Risk M - Medium Risk L - Low Risk

Risk Acceptance Authority for Safety Standards Deviation *(TABLE 4-1)*

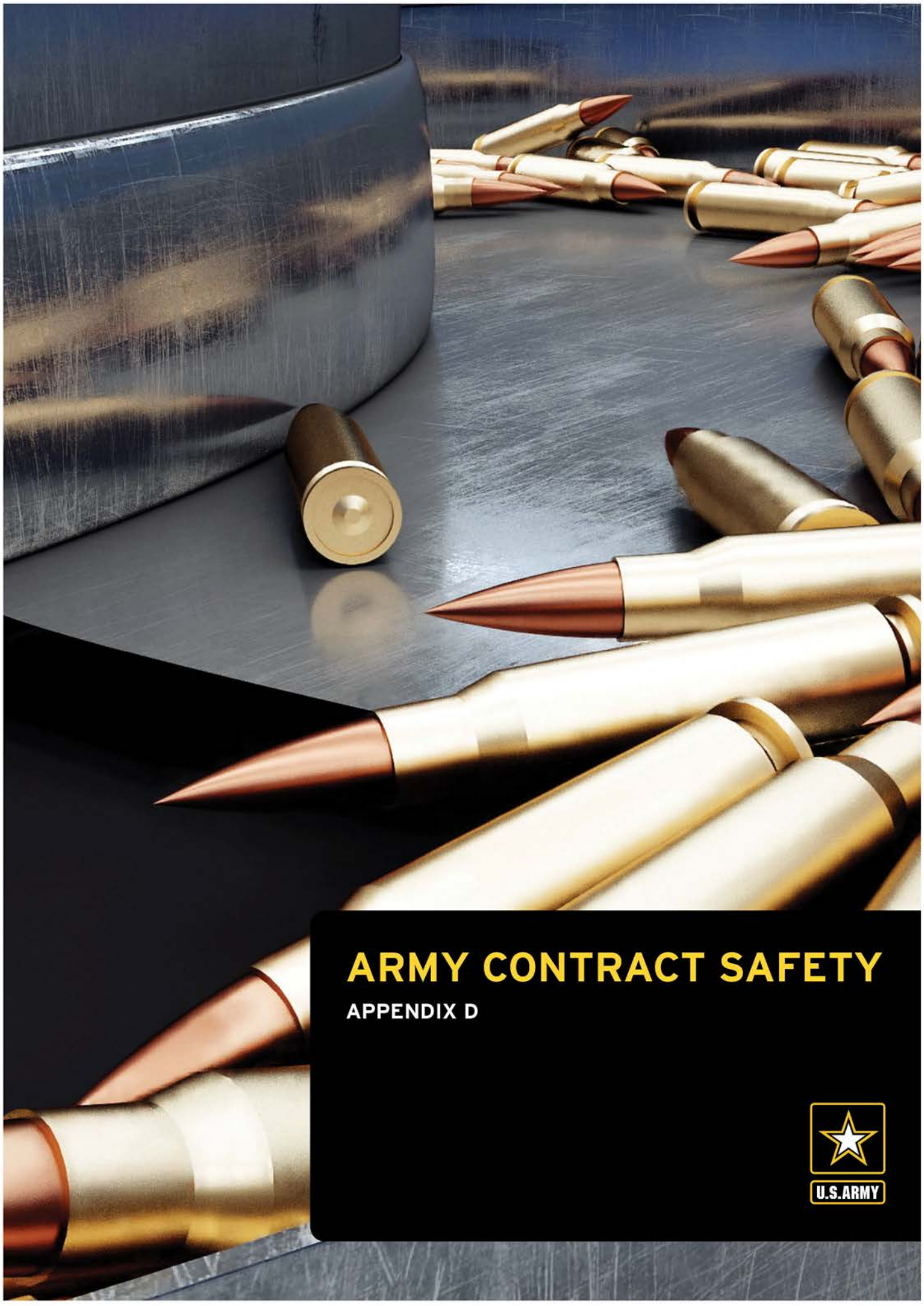
CATEGORY OF RISK	DURATION OF RISK: Event Waiver	Waiver		Exemption
	1 month or less	1 month to 1 year	1 year to 5 years	>5 years or permanent
Extremely High Risk (EH)	GO	Army HQ CG	Army HQ CG	Army HQ CG
High Risk (H)	Brigade CO* or responsible O-6	GO	GO	GO
Medium Risk (M)	Battalion CO* or responsible O-5	Brigade CO* or responsible O-6	GO*	GO*
Low Risk (L)	Company CO or responsible O-3	Battalion CO* or responsible O-5	Brigade CO* or responsible O-6	Brigade CO* or responsible O-6

CG - Commanding General CO - Commanding Officer GO - General Officer HQ - Headquarters

* May delegate in writing authority to accept at the next lower command level
- "Army HQ CG" refers to ACOMs, ASCCs, DRUs, or Director, Army National Guard
- Equivalent civilian grades may be substituted for military ranks in civilian-led organizations
- Army headquarters commanders are required to establish and publish approval authority for risk acceptance and decision making for their command or adopt, in writing, Table 4-1.

For support, contact USATCES at: usarmy.mcalester.usamc.list.dac-es-personnel@mail.mil or (918) 420-8807 or DSN: 956-8807

17 SEPTEMBER 2017



ARMY CONTRACT SAFETY

APPENDIX D

U.S.ARMY

D ARMY CONTRACT SAFETY

This Smart Card provides a ready reference to Army contract ES requirements, processes, and phases.

Army Contract Safety

Contract Safety is Important

- Contractors perform many functions and tasks, including high-risk operations, that are critical to supporting Army operations
- Because contractors may work alongside Soldiers and civilians, their safety and occupational health practices can impact the well-being of Army personnel and property, and the general public

Contract Safety is Required

LAW	POLICY
Walsh-Healey Public Contracts Act (1936)	DODI 6055.01 DOD Safety & Occupational Health Program
Service Contract Act (1965)	
29 CFR § 1925 Safety & Health Standards for Federal Service Contracts	AR 385-10 and DA PAM 385-10 Army Safety Program
Title 48 Federal Acquisition Regulation System	

Contractors are responsible for their employees, Government personnel and property, and the general public

- Walsh-Healey and the Service Contract Act—no contract activities will be performed in facilities or under conditions that are unsanitary, hazardous, or dangerous to the health of employees
- 29 CFR 1960—every contractor and subcontractor must comply with the safety and health standards in 41 CFR, and maintain records

Safety and Occupational Health Must be Considered in Acquisition Plans

Contract safety must be an inherent part of the acquisition plan and effort

- FAR Part 7—requiring activities, when developing acquisition plans, must follow instructions in paragraphs (a) and (b), and the implementing command's directives; paragraph (b) directs all plans to address
  - Government-furnished property
  - OSHA and other considerations

Many Contract Areas have Special Safety Considerations

- Requiring activities must identify risks by performing risk analyses
- These analyses help determine how risks can be mitigated or removed
- All remaining or residual risk must be documented, and effective control measures included in the contract

Safety professionals support the risk assessment process—early involvement is best!

Many Contract Areas have Special Safety Considerations

- Many contractor operations are high risk
- Federal, state, and local regulations apply, so contractor compliance is paramount

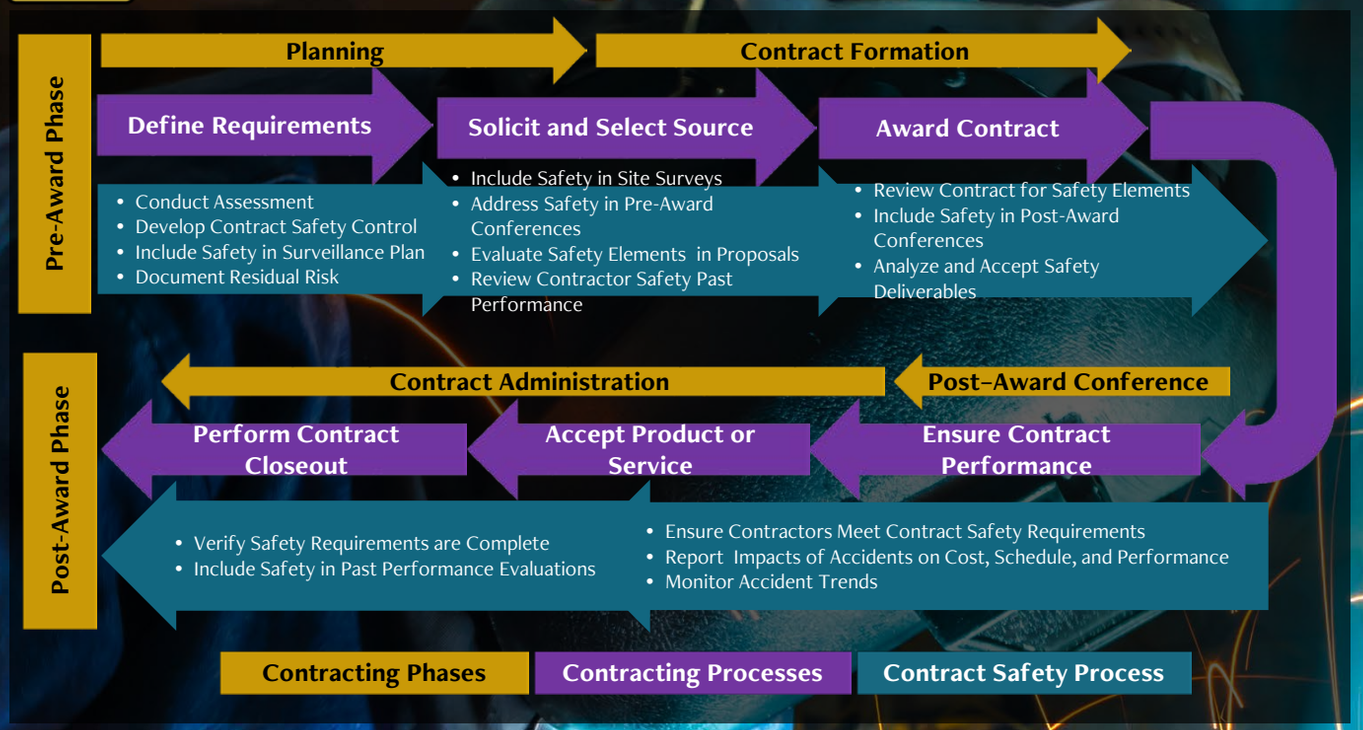
Army safety professionals are experts in these areas and can provide advice and guidance for contract language and other requirements

Safety Support is Readily Available

- Requiring activities have access to safety support through the command's safety office
- The Army Combat Readiness Center and Director of Army Safety provide overall program guidance and direction

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

Army Contract Safety



Contractor Accident Prevention Plans and Processes are Critical

- Contractor accident prevention is key for
  - safeguarding personnel, property, and the public
  - avoiding interruptions in Government operations and project delays
  - controlling costs
- Accident prevention processes and standards are found in law, policy, and procedures
- Army safety professionals can help determine whether a bidder's Accident Prevention Plan and procedures are adequate for mitigating risks
- They can also help assess contractor safety past performance, trends, and history

Your Army Safety Professional can Help

- Safety professionals are ready to provide guidance and assist with
  - defining contract safety requirements
  - arranging pre- and post-award site visits and conferences
  - providing safety training for contracting officer representatives
  - hosting contractor Q&A sessions
  - reviewing contractor safety submissions
  - investigating accidents and reporting mishaps
  - ensuring contractor operations are integrated into the Commander's explosives safety program

Safety Considerations at Contract Close-out

- Document all contract safety requirements, deliverables, and procedures
- Input all accidents and mishaps in the Contractor Performance Assessment Reporting System (CPARS)
- Analyze contractor accident trends
- Maintain accident records, and safety lessons-learned

Integrate Safety Across the Contract Life Cycle

- Opportunities exist for integrating contract safety elements across the contract life cycle
- Safety professionals can assist from initial planning through contract closeout

Contract safety requires a team effort

- *Requiring activity*
- *Contracting officer*
- *Contracting officer's representative*
- *Safety professionals*

More Information: Army Contract Safety Handbook, https://safety.army.mil/Portals/0/Documents/CP-12/CP12HOME/Standard/US_Army_Contract_Safety_Handbook.pdf

PROCESS SAFETY MANAGEMENT (PSM)

APPENDIX E

U.S.ARMY

E PROCESS SAFETY MANAGEMENT (PSM)

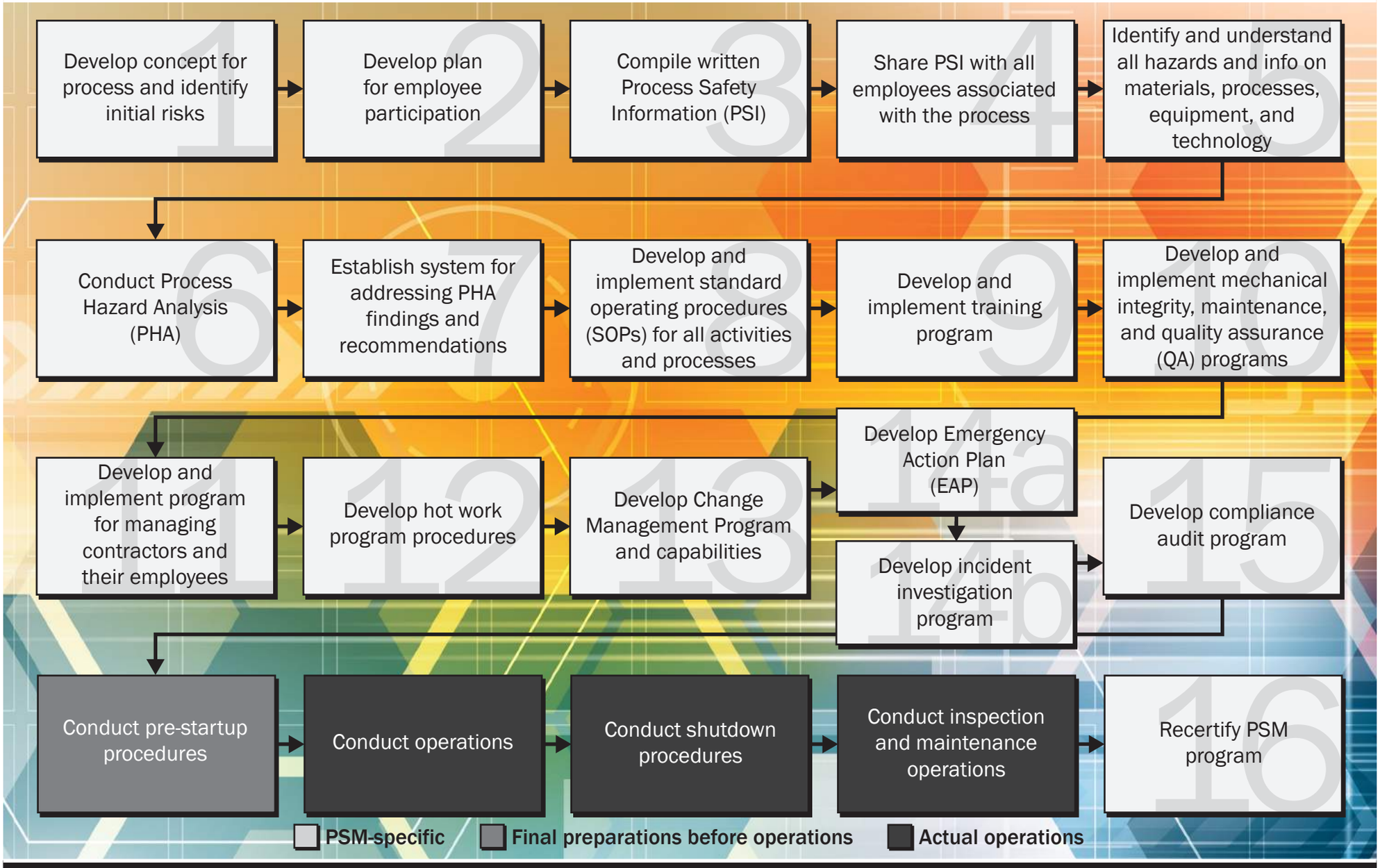
This Smart Card provides a ready reference to Army process safety management (PSM) and process hazard analysis (PHA) phases and terminology.

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

Explosives Safety in RDT&E and Industrial Ops

PROCESS SAFETY MANAGEMENT (PSM)

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807, DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil



Basic order in which PSM is conducted is based on *29 CFR 1910.119*

Office of the Director of Army Safety
Building 1456, 9351 Hall Road
Fort Belvoir, VA 22060-5860
USArmy.pentagon.hqda-aso.mbx.army-safety-office@mail.mil

Explosives Safety in RDT&E and Industrial Ops

PROCESS SAFETY MANAGEMENT (PSM)

US Army Technical Center for Explosives Safety (USATCES)
(918) 420-8807, DSN: 956-8807
USArmy.mcalester.usamc.list.dac-es-personnel@mail.mil

What is PSM?

- Systematic, holistic approach to identifying, assessing, and managing the risk associated with every aspect of a process
- Required by law and directed by ***29 CFR 1910.119***
- Considers all facets of a process:

PROCESS DESIGN

PROCESS TECHNOLOGY

OPERATIONAL & MAINTENANCE PROCEDURES

NON-ROUTINE ACTIVITIES

EMERGENCY PLANS & PROCEDURES

TRAINING

ADDITIONAL ELEMENTS FOR CONSIDERATION

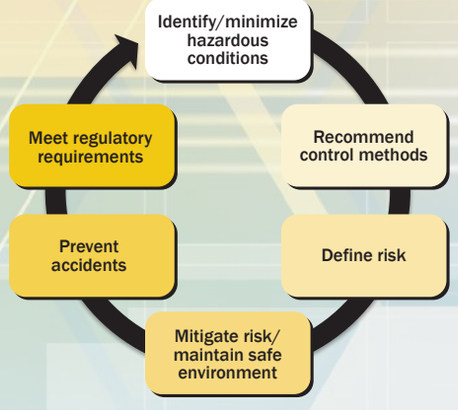
PSM TERMINOLOGY

Defined by the Occupational Safety and Health Administration (OSHA)

- **PROCESS:** Any activity involving a highly hazardous chemical
- **HIGHLY HAZARDOUS CHEMICAL:** A substance possessing toxic, reactive, flammable, or explosive properties
- **FACILITY:** Buildings, containers, or equipment that contain a process
- **LABORATORY:** A facility where the "laboratory use of hazardous chemicals" occurs; a workplace where relatively small quantities of hazardous chemicals are used on a non-production basis
- **CATASTROPHIC RELEASE:** A major, uncontrolled emission, fire, or explosion involving highly hazardous chemicals that presents serious danger to workplace personnel

Process Hazard Analysis (PHA)

- Identical to Army Hazard Analysis and required for all operations involving energetic or hazardous materials

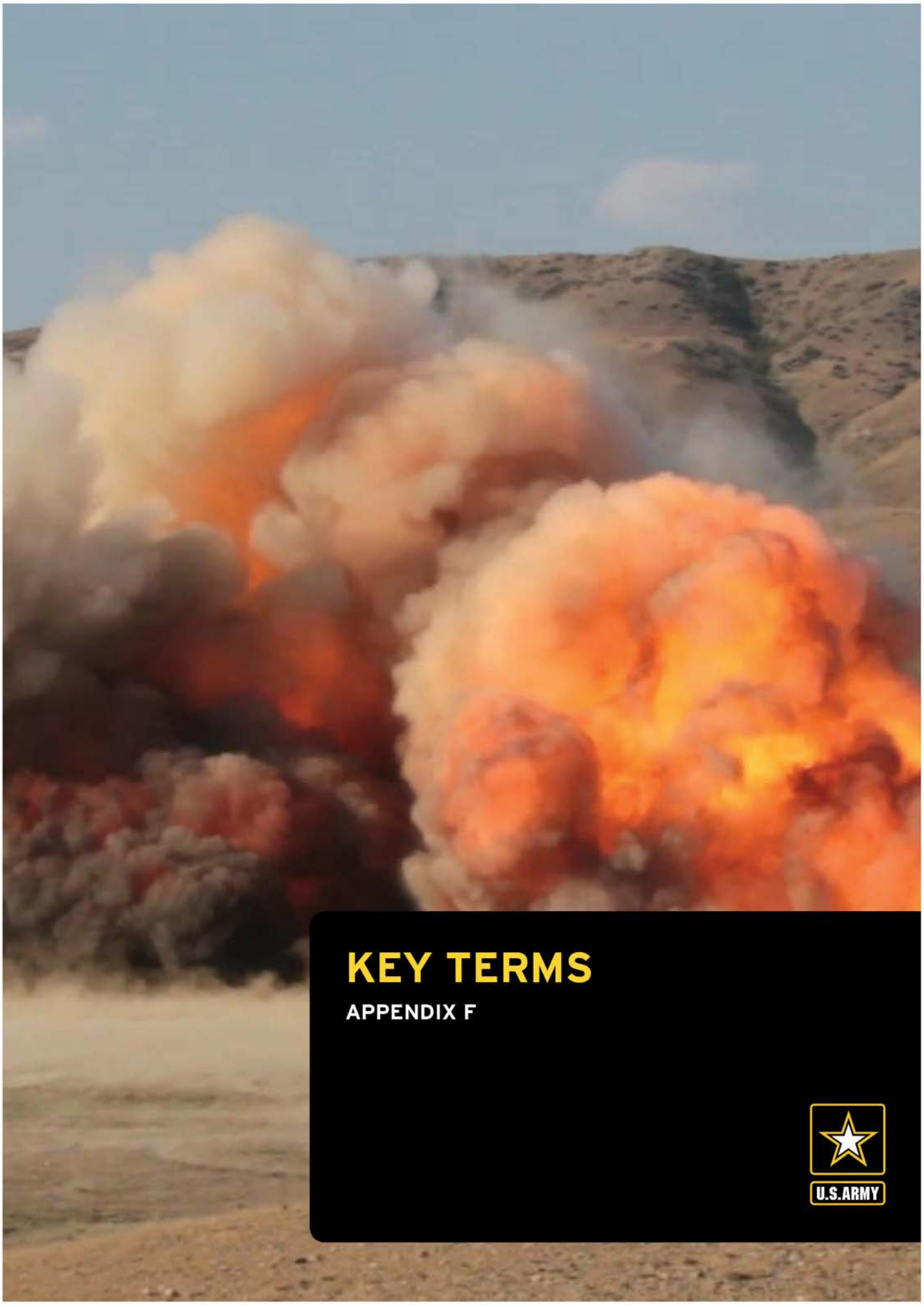


PHA Considerations and Methodologies

- Unique considerations for RDT&E:
  - remote operations
  - essential/nonessential personnel
  - protective construction
  - range safety
  - ammunition peculiar (APE), personal protective (PPE), and other equipment
- May involve multiple methodologies depending on number, type, and relationships of identifed hazards
  - what-if?
  - checklist
  - fault tree analyis
  - hazard & operability (HAZOP) study
  - failure mode & effects (FMEA) analysis

17 SEPTEMBER 2017

For PSM, reference *29 CFR 1910.119*. For hazard analysis and risk management, reference *DA PAM 385-30* and *AMC-R 700-107*.



KEY TERMS

APPENDIX F

U.S.ARMY

F KEY TERMS

Accidents	Any incident involving ammunition or explosives (AE) that results in, or has potential to result in, death or injury to a person or damage to equipment and property, military or civilian.
Ammunition and explosives (AE)	Includes all items of ammunition; propellants, liquid and solid; pyrotechnics; high explosives; guided missiles; warheads; devices; and chemical agent substances, devices, and components presenting real or potential hazards to life, property, and the environment. (See military munitions)
Ammunition peculiar equipment (APE)	Equipment, systems, and processes that are not commercially available and require approval or certification for use in hazardous or explosive operations. APE is used to support conventional and chemical ammunition maintenance, surveillance, demilitarization, and testing type operations.
Ammunition preposition stocks	AE placed at or near the point of planned use or at a designated location to reduce reaction time, and to ensure timely support of a specific force during initial phases of an operation.
Ammunition surveillance	Quality assurance and logistics functions related to the inspection, storage, receiving, issuing, testing, and classification of AE; functions that affect ES during handling, storage, transportation, maintenance, use, and disposal of military munitions; and core functions of inspecting and determining the reliability of the Army's military munitions stockpile, inspecting and monitoring military munitions-related operations for compliance with explosives safety requirements, and protecting

	the Army's warfighting assets and the public from unnecessary exposures to explosives hazards.
Ammunition Suspension and Restriction Program	Program to identify all munitions that have been withdrawn from issue or use, with or without qualifications, because of an unsafe or suspected unsafe condition or munitions that cannot be expected to meet required performance under all conditions, but may be issued and used with qualifications on their use.
Amnesty program	Program to ensure maximum recovery of military AE and residue items. The program provides an opportunity for individuals to return AE that has been stolen, misplaced, or erroneously left in the possession of a unit after turn-in and reconciliation has been finalized. Returns can be made without fear of prosecution.
Audit procedures	The independent appraisal activity within the Army for the review of financial, accounting, and other operations, as a basis for protective and constructive service to command and management at all levels.
Blocking and bracing	Any one of a variety of methods for securing AE in a transportation vehicle.
Certification of destruction/disposal	A certificate created to document the destruction of AE in accordance with established policies and procedures.
Chemical accident/incident response and assistance (CAIRA) operations	Planned response and assistance to non-deliberate (accident) and deliberate (incident) chemical events where a chemical agent is released into the ambient atmosphere and either threatens unprotected personnel or has the potential to threaten unprotected person

Chemical Surety Officer	Designated officer responsible for managing day-to-day operations of the Chemical Surety Program; monitoring and evaluating the Chemical Surety Program; acting as the focal point for chemical surety matters; monitoring chemical safety, security, accident and incident response, inventory management, and personnel reliability to ensure those programs receive the necessary emphasis; expeditiously bringing any apparent incidents or shortcomings to the attention of the commander or director; and serving as liaison with organizations that provide external support to the chemical surety mission.
Chemical Surety Program	A system of control measures designed to provide protection to the local population, workers, and the environment by ensuring that chemical surety operations are conducted safely; chemical surety materiel are secure; and personnel involved in those operations meet the highest standards of reliability.
Commercial carriers	Transportation companies contracted to transport shipments of AE.
Decontamination	The process of making any person, object, or area safe by absorbing, destroying, neutralizing, making harmless, or removing AE, chemical or biological agents, or by removing radioactive material clinging to or around it.
Demil plants	A facility for dismantling demilitarized items.
Demilitarized items	The act of destroying the hazard characteristics inherent in AE. This may include mutilation; dumping at sea; and scrapping, burning, or alteration designed to prevent the further use of such AE for its originally intended military or lethal purpose.

Explosives safety management	The application of policies, regulations, procedures, standards, engineering, and resources that define a risk management process designed to sustain operational capabilities and readiness; be cost effective; and protect people, property, and the environment from, and prevent accidents, injuries, and other adverse consequences that may be caused by, DoD military munitions or other encumbering explosives or munitions.
Explosives safety quantity distance	The minimum permissible distance between a donor site containing a quantity of explosives and a susceptible site requiring protection.
Explosives Safety Management Program	The DoD program that integrates and applies ESM tenets and requirements into DoD planning, decision making, and day-to-day operations.
Hazardous materials	Commodities as defined by 49 CFR requiring special care and handling, such as AE; flammable substances; toxic chemicals; sources of ionizing radiation or radiant energy; oxidizing material; corrosive material; compressed gases; and any compound, mixture, element, or material which, because of its nature, is hazardous to store or handle.
Hazards	Condition with the potential to cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation.
Host nation	Nation that receives the forces or supplies of U.S., allied nations, and NATO organizations to be located on, operate in, or transit through its territory.
Incidents	An occurrence, caused by either human action or natural phenomena, which requires action to prevent or minimize loss of life or damage to property or natural resources.

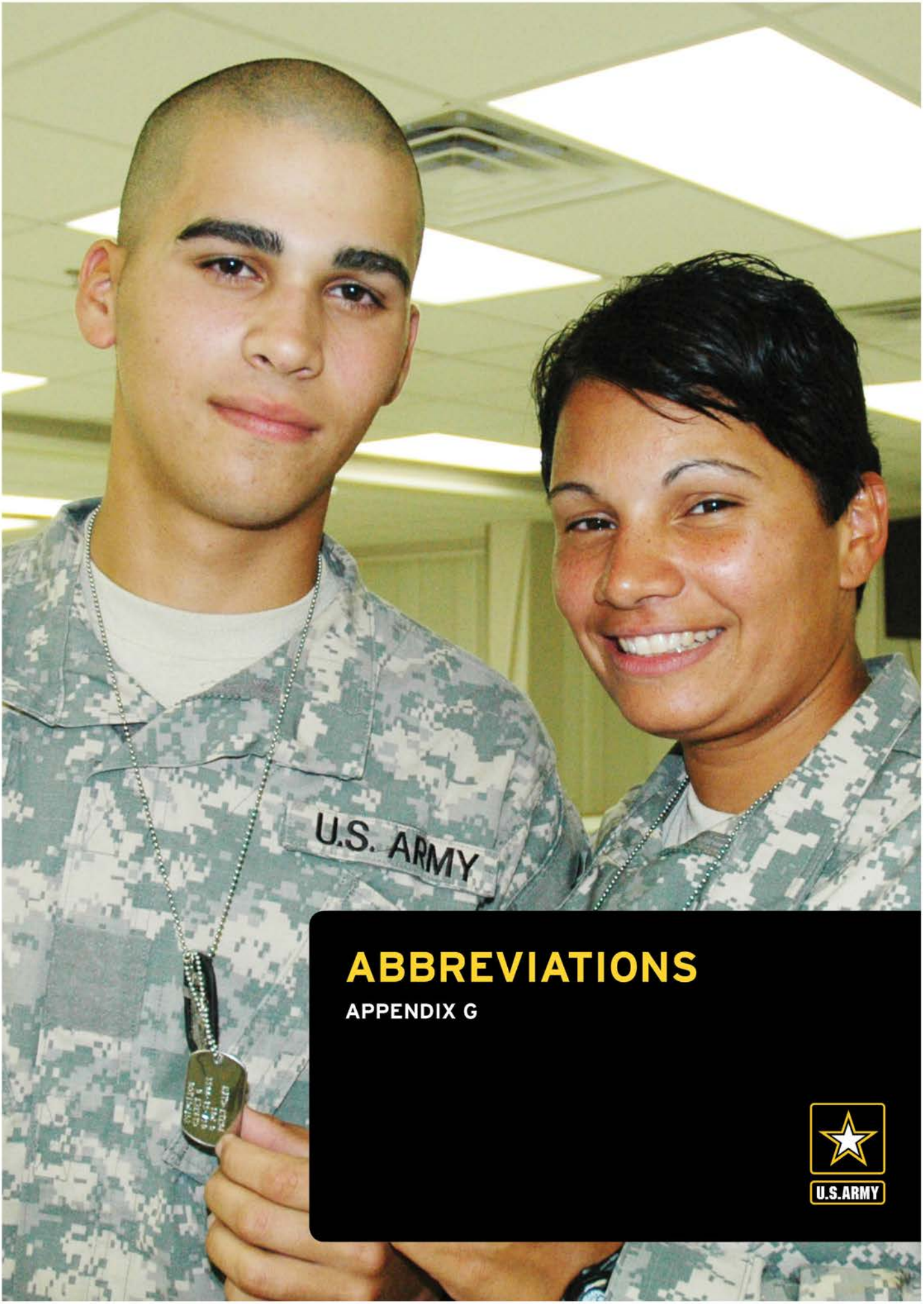
Lightning protection systems	Systems designed to protect an AE facility from lightning strikes by intercepting such strikes and safely passing their extremely high currents to ground. A lightning protection system includes a network of air terminals, bonding conductors, and ground electrodes designed to provide a low impedance path to ground for potential strikes.
Malfunction involving ammunition and explosives	Failure of an ammunition item to function as expected when fired or launched. Malfunctions include hang fires, misfires, duds, abnormal functioning, and premature functioning of explosive ammunition items.
Management and disposition of MPPEH, MDEH, and MDAS	Includes the identification; recovery; collection; inspection; determination of the material's explosives safety status; marking; storage, including segregating by the explosives safety status; security; demilitarization; accountability, when appropriate; and the transfer or release, including sale.
Material	The tangible substance that goes into the makeup of a physical object.
Materiel	Supplies and equipment necessary to support a military mission.

Materiel potentially presenting an explosive hazard	Material owned or controlled by the DoD that, before determination of its explosives safety status, potentially contains explosives or munitions (e.g., munitions containers and packaging material; munitions debris remaining after munitions use, demilitarization, or disposal; and range-related debris) or potentially contains a high enough concentration of explosives that the material presents an explosive hazard (e.g., equipment, drainage systems, holding tanks, piping, or ventilation ducts that were associated with munitions production, demilitarization, or disposal operations). Excluded from MPPEH are: • Military munitions and military munitions-related materials, including wholly inert components (e.g., fins, launch tubes, containers, packaging material), that are to be used or reused for their intended purpose and are within a DoD Component-established munitions management system. • Non-munitions-related material (e.g., horseshoes, rebar, other solid objects) and munitions debris that are solid metal fragments that do not realistically present an explosive hazard • Other items (e.g., gasoline cans, compressed gas cylinders) that are not munitions or munitions-related material but may present an explosion hazard.

Military munitions	All AE products and components produced for or used by the armed forces for national defense and security. The term includes confined gaseous, liquid and solid propellants, explosives, pyrotechnics, chemical and riot control agents, smokes, and incendiaries, including bulk explosives and chemical warfare agents, chemical munitions, rockets, guided and ballistic missiles, bombs, warheads, mortar rounds, artillery ammunition, small arms ammunition, grenades, mines, torpedoes, depth charges, cluster munitions and dispensers, demolition charges, and devices and components thereof. The term does not include wholly inert items, improvised explosive devices, and nuclear weapons, nuclear devices, and nuclear components, other than nonnuclear components of nuclear devices that are managed under the nuclear weapons program of the Department of Energy after all required sanitization operations under the Atomic Energy Act of 1954 (42 USC 2011 et seq.) have been completed. (10 USC 101(e)(4)) (See AE)
Military Munitions Rule	Defines when military munitions become waste and how these waste military munitions will be managed.
Missile	A weapon or object to which propulsive energy is applied or continues to be applied after launch.
Placards	Signs used by the Army to identify AE and its associated hazards.
Proving grounds	A military installation or reservation where weapons or other military technology are experimented with or are tested, or where military tactics are tested.
Research, development, test, and evaluation	The demonstration or validation and technology transfer of materiel, equipment, and weapons systems at Army proving grounds, laboratories, and related facilities.

Required explosives safety submission (RESS)	One of five DoD Explosives Safety Board explosives safety submissions required to formally review, evaluate, and approve measures to protect DoD employees and the public from the explosive hazards associated with operations that involve DoD military munitions, including munitions response actions. These include Explosives Safety Quantity Distance (ESQD) i.e., Explosives Site Plan and Chemical Agent Site Plan; Munitions Response Chemical Safety Submission (MRCSS); Munitions Response Explosives Safety Submission (MRESS); Risk-Based Safety Submission; and Hybrid Safety Submission (HSS). (See DoDI 6055.16.)
Standing operating procedures	A set of instructions covering those features of operations which lend themselves to a definite or standardized procedure without loss of effectiveness.
Stockpile	Quantities of AE authorized to be procured for current operations. Stockpiles are established, in lieu of, or in addition to, normal levels of supply, usually because procurement economies, procurement difficulties, or unpredictable issues demand such action.
Sustainment	The provision of logistics and services required to maintain and prolong AE operations until successful mission accomplishment.
Tactical environments	Forward deployed areas outside the United States for which responsibility is specifically assigned to the commander of the area as a measure for control of assigned forces and coordination of support for the conduct of military operations against the enemy.
Toxic chemical	Any chemical which, through its chemical action on life processes, can cause death, temporary incapacitation, or permanent harm to humans or animals. This includes all such chemicals, regardless of their origin or of their method of production, and regardless of whether they are produced in facilities, in munitions, or elsewhere.

Transportation protective services	Procedures for ensuring adequate protection of materiel in-transit and maintaining shipment accountability for minimizing freight loss and damage caused by negligence, unauthorized, or illegal acts; and providing a means for corrective or compliance action.



ABBREVIATIONS

APPENDIX G

U.S.ARMY

G ABBREVIATIONS

3Rs	Recognize, Retreat, Report
AA&E	arms, ammunition and explosives
ACOM	Army Command
ACTEDS	Army Civilian Training and Education Development System
AE	ammunition and explosives
AESM	Advanced Explosives Safety Management
AGM	above-ground magazine
AHA	ammunition holding area
AI	acceptance inspection
ALMS	Army Learning Management System
ALSE	aviation life-support equipment
AM	Ammunition Manager
AMRP	Army Master Range Plan
APE	ammunition peculiar equipment
AR	Army Regulation
ASCC	Army Service Component Command
ASO	Aviation Safety Officer
ASTM	American Society for Testing and Materials
ATP	Army Techniques Publication
ATRRS	Army Training Requirements and Resource System
AWO	Ammunition Warrant Officer
BAC	Barricade Angle Calculator
BEM	Buried Explosion Module
BLAHA	basic load ammunition holding area

CAA	Competent Authority Approval
CAD	cartridge actuated device
CAI	centralized accident investigation
CAIRA	chemical accident/incident response assistance
CCR	Certificate of Compelling Reason
CFR	Code of Federal Regulations
CJCSI	Chairman of the Joint Chiefs of Staff Instruction
CL	combat load
COA	courses of action
CODO	certification of disposal operation
COE	Certificate of Equivalency
COR	contracting officer's representative
CP	Career Program
CSL	common skill level
CSP	Chemical Agent Site Plan
DA	Department of the Army
DA PAM	Department of the Army Pamphlet
DAC	Defense Ammunition Center
DARAD	Deviation Approval and Risk Acceptance Document
DDESB	DoD Explosives Safety Board
Demil	demilitarization
DL	distance learning
DMM	discarded military munitions
DoD	Department of Defense
DoDD	Department of Defense Directive
DoDI	Department of Defense Instruction
DOT	Department of Transportation
DRU	Direct Reporting Unit

DSR	Depot Surveillance Record
DTR	Defense Transportation Regulation
DU	depleted uranium
ECM	earth-covered magazine
EED	electro explosive device
EOD	explosive ordnance disposal
EODT&T	Explosive Ordnance Disposal Technology and Training
EPA	Environmental Protection Agency
EPCRA	Emergency Planning Community Right-To-Know Act
ES	explosives safety
ESAV	explosives safety assistance visit
ESM	explosives safety management
ESMP	Explosives Safety Management Program
ESMRM	Explosives Safety and Munitions Risk Management
ESOH	Environment, Safety, and Occupational Health
ESP	Explosives Site Plan
ESQD	explosive safety quantity distance
ESS	explosives safety siting
ESSP	Explosives Safety Site Plan
ESTWG	Explosives Safety Training Working Group
FAA	Foreign Assistance Act
FARP	forward arming and refueling point
FCR	Functional Chief Representative
FMP	Foreign Materiel Program
GEQ	Generic Equation Calculator
GIS	Geographic Information System
GOCO	government owned, contractor operated
GS	General Schedule
HAWG	Hazard Analysis Working Group

HAZMAT	hazardous materials
HD	hazard class and division
HERO	hazards of electromagnetic radiation on ordnance
HN	host nation
IAI	installation accident investigation
IAW	in accordance with
ICM	improved conventional munitions
IL	instructor-led
ITO	Installation Transportation Officer
JHCS	Joint Hazard Classification System
JRC	Jacobs-Roslund Calculator
KO	contracting officer
KSA	knowledge, skills, and abilities
LAR	Logistics Assistance Representative
LOC	lines of communication
LPS	lightning protection system
LRTAO	Logistics Review and Technical Assistance Office
MC	munitions constituents
MCO	Marine Corps Order
MDAS	materiel documented as safe
MDEH	materiel documented as an explosive hazard
MEC	munitions and explosives of concern
MHP	Munitions History Program
MIL-STD	Military Standards
MMR	Military Munitions Rule
MOA	memorandum of agreement
MOS	Military occupational specialty
MPPEH	materiel potentially presenting an explosive hazard

MPTNC	Modified-Pseudo Trajectory Normal Calculator
MTTP	multi-service tactics, techniques, and procedures
NATO	North Atlantic Treaty Organization
NCO	Non-commissioned officer
NEW	net explosive weight
NEWQD	net explosive weight quantity distance
NSA	non-standard ammunition
OB	open burning
OD	open detonation
OSHA	Occupational Safety and Health Administration
PAD	propellant actuated device
PEP	Propellants, Explosives, Pyrotechnics
PES	potential explosive site
POC	point of contact
POL	petroleum, oil, and lubricants
PSM	process safety management
PTR	public traffic route
PWS	Performance Work Statement
QASAS	Quality Assurance Specialists (Ammunition Surveillance)
QD	quantity distance
RDP	Range Development Plan
RDT&E	research, development, test, and evaluation
RESS	required explosives safety submission
RM	risk management
RSO	Radiation Safety Officer
SAAS	Standard Army Ammunition System
SC	Senior Commander
SCG	storage compatibly group
SDS	Standard Depot System

SMAC	Stacked Munition Article Calculator
SMCA	Single Manager for Conventional Ammunition
SME	subject matter expert
SOH	safety and occupational health
SOP	standing operating procedure
STP	Soldier Training Publication
TAMIS	Total Ammunition Management Information System
TC	Training Circular
TCN	Transportation Control Number
TM	technical manual
TP	technical paper
TPS	transportation protective services
USACRC	U.S. Army Combat Readiness Center
USATCES	U.S. Army Technical Center for Explosives Safety
USSOCOM	United States Special Operations Command
UXO	unexploded ordnance
UXOCOE	DoD Executive Agent for the Unexploded Ordnance Center for Excellence
WMM	waste military munitions
WO	Warrant Officer

Army Civilian Corps Creed

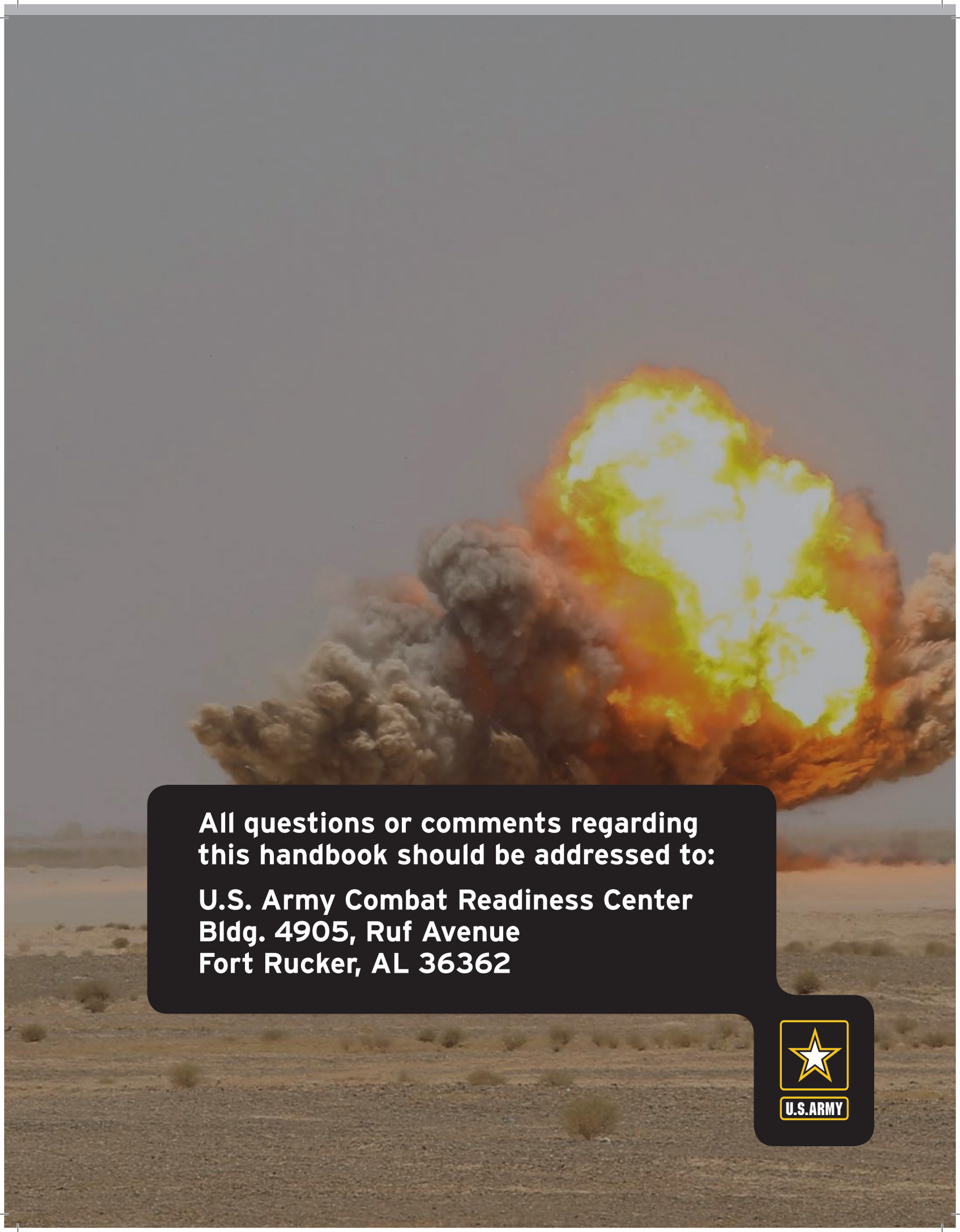
I am an Army Civilian – a member of the Army Team
I am dedicated to our Army, our Soldiers and Civilians

I will always support the mission
I provide stability and continuity during war and peace
I support and defend the Constitution of the United States, and
consider it an honor to serve our Nation and our Army

I live the Army values of

Loyalty
Duty
Respect
Selfless Service
Honor
Integrity and
Personal Courage

I AM AN ARMY CIVILIAN



All questions or comments regarding this handbook should be addressed to:

U.S. Army Combat Readiness Center
Bldg. 4905, Ruf Avenue
Fort Rucker, AL 36362

U.S.ARMY