

Department of the Army  
Pamphlet 700–107

Logistics

# **Preparation of Standard Operating Procedures and Written Standards for Ammunition Operations**

Headquarters  
Department of the Army  
Washington, DC  
11 December 2020

**UNCLASSIFIED**

# ***SUMMARY***

DA PAM 700–107

Preparation of Standard Operating Procedures and Written Standards for Ammunition Operations

This new publication, dated 11 December 2020—

- o Supports the guidance in AR 385–10 (throughout).
- o Provides clear, consistent guidance on preparation, format, and management of standard operating procedures relating to ammunition operations (throughout).

## Logistics

# Preparation of Standard Operating Procedures and Written Standards for Ammunition Operations

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By Order of the Secretary of the Army:

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Chief of Staff

Official:

  
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**History.** This publication is a new Department of the Army pamphlet.

**Summary.** This pamphlet describes procedures for the preparation of standard operating procedures and written standards for ammunition operations.

**Applicability.** This pamphlet applies to the Regular Army, the Army National Guard/Army Guard of the United States,

and the U.S. Army Reserve, unless otherwise stated. It also applies to all active components and reserve components of the Army, the Marine Corps, and Commanders in Chief of unified and specified commands involved in retail munitions support in joint peacetime, wartime, and/or contingency operations.

**Proponent and exception authority.**

The proponent of this pamphlet is the Deputy Chief of Staff, G–4. The proponent has the authority to approve exceptions or waivers to this pamphlet that are consistent with controlling law and regulations. The proponent may delegate this approval authority, in writing, to a division chief within the proponent agency or its direct reporting unit or field operating agency, in the grade of colonel or the civilian equivalent. Activities may request a waiver to this pamphlet by providing justification that includes a full analysis of the expected benefits and must include formal review by the activity's senior le-

gal officer. All waiver requests will be endorsed by the commander or senior leader of the requesting activity and forwarded through their higher headquarters to the policy proponent. Refer to AR 25–30 for specific guidance.

**Suggested improvements.** Users are invited to send comments and suggested improvements on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to the Deputy Chief of Staff, G–4 (DALO–SPM), 500 Army Pentagon, Washington, DC 20310–0500. Also, the Marine Corps users are invited to send comments and suggested improvements to Commander, Marine Corps Systems Command (PMM–116), Quantico, VA 22556–9092.

**Distribution.** This publication is available in electronic media only and is intended for the Regular Army, the Army National Guard/Army National Guard of the United States, and the U.S. Army Reserve and for the Marine Corps.

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### Glossary

## **Chapter 1**

### **Introduction**

#### **1–1. Purpose**

This pamphlet prescribes policies and responsibilities to prepare standard operating procedures (SOPs) and written standards (WSs) for ammunition operations (AOs).

#### **1–2. References and forms**

See appendix A.

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

See the glossary.

#### **1–4. General**

Commanders of installations with an ammunition mission will ensure that the stated objectives of this pamphlet are accomplished at installations and activities under their command. Each employee and supervisor is responsible for complying with this pamphlet as written and approved.

#### **1–5. Applicability**

This pamphlet applies to all U.S. Army installations and activities with a mission involving ammunition or explosives or explosive components, guided missiles, and toxic chemicals' receipt, issue, storage, transportation, demilitarization, or surveillance missions and to all personnel involved with these missions.

#### **1–6. Scope**

This pamphlet addresses the preparation of SOPs for explosive, nonexplosive, and administrative operations. This pamphlet applies to all Department of the Army civilian civil service employees (permanent or temporary), military service members, contracted employees, and support service contractors who perform services involving ammunition or explosives, including inert or nonexplosive components. When applied to contractor personnel (under an existing contract), the local contracting officer must be involved in the decision process as to how it will be applied to contractors. This may involve amendments or alterations to the existing contract.

## **Chapter 2**

### **Standard Operating Procedures**

#### **2–1. Overview**

a. Prepare SOPs for all operations involving explosives.

(1) Operations covered by this pamphlet include: transportation, receipt, storage, issue, shipping, maintenance, preservation and packaging, demilitarization, disposal, target and accuracy firing testing, stockpile reliability testing, inspection, and surveillance, involving conventional ammunition and explosives, large rockets, guided missiles, toxic chemical munitions and bulk agents, and ammunition containing radioactive materials or components. Also included are research, development, test, and evaluation (RDT&E) SOPs developed for AOs. For these RDT&E operations, format and external review requirements of this pamphlet are not mandatory but should have an external review within their chain of command.

(2) Follow this pamphlet in addition to any other broad guidance that is in other Department of Defense (DoD) and Army doctrine regarding SOP writing, content, and format. Other stated requirements for SOP development do not supersede the requirement to follow this pamphlet as stated.

(a) Document and review routine, repetitive, depot-type operations, such as transportation or demilitarization that support RDT&E operations, per all provisions of this pamphlet.

(b) SOPs for load assemble pack, manufacturing, and contractor-owned, contractor-operated operations are required. It is recommended that they be prepared per the guidelines of this pamphlet. However, for these operations, format and external review requirements of this pamphlet are not mandatory.

(3) This pamphlet does not apply to—

(a) Chemical demilitarization operations conducted by the assembled chemical weapons alternatives.

(b) Laboratory operations involving research chemical agents at Chemical Materials Agency facilities, if conducted in accordance with accepted laboratory practices.

b. SOPs prepared prior to the effective date of this pamphlet will not be rewritten solely to comply with provisions of this pamphlet. SOPs will be rewritten in prescribed format at the time of the next revision.

c. SOPs will be clear, concise, and specific. SOPs will be prepared in language understandable to the personnel required to use them.

d. Include specific operational, safety, and quality control requirements at the step in the SOP or WS to which they apply. General safety requirements that apply to more than one operation may be listed once at the forward portion of the SOP or WS. Quality assurance (QA) provisions may be included in the operational SOP or WS or they may be included in a separate QA-specific SOP or WS. If QA provisions are provided in a separate SOP or WS, the separate SOP or WS will reference the operational SOP or WS and vice versa.

e. A hazard analysis (HA), as outlined in appendix J, is required to support the development of SOPs. HAs will be performed for and documents will be included with all new and revised statements-of-work-type documents (that is, depot maintenance work requirements (DMWRs), maintenance work orders, letters of instruction (LOIs), and special surveillance instructions). A major function of the HA is to provide the decision makers with an assessment of the identified hazards, proposed controls, and rationale for acceptance or rejection of any residual risk. The analysis should be used as a management tool for making risk management decisions and allocating available resources for maximum benefit. Use the HA to develop the SOP. File a copy of the HA with a copy of the SOP in the office of record of the SOP (reference block 5 of the SOP cover sheet) to assure it is available to support revisions of procedures or equipment and development of analyses for similar items. The commander or approving authority will determine if the HA will be required or included in the WS for nonexplosive operations.

f. Validate new SOPs at the installation prior to final approval by using a pilot run for conventional operations, both explosive and nonexplosive. The purpose of this validation is to verify that the instructions in the SOP or WS are clear to the operators and that the execution of the steps in the SOP or WS create no conditions that would constitute an unacceptable risk to the health or safety of personnel or the environment. Divide the introduction of these new SOPs into three phases—

(1) *Phase 1.* Conduct a pilot run using dummy or inert ammunition, if available. During this phase, the operation supervisor should read the SOP or WS aloud, one step at a time, while an operator attempts to perform each step exactly as read. Note any problems encountered at this time for correction before the start of the actual operation. A representative of the installation safety office as well as any other appropriate offices (for example, offices handling ammunition planning, environmental concerns, QA, surety, or operating supervision) will observe the pilot run.

(2) *Phase 2.* Change the SOP or WS based on findings during phase one and obtain final local approval.

(3) *Phase 3.* Supervisors and operators of each shift will become familiar with the SOP or WS and sign the supervisor's or operator's statement when thoroughly familiar with SOP or WS instructions. For explosive operations, gradually initiate live operations for each shift under close supervision at a limited production rate and build to the desired production rate.

## **2-2. General information for standard operating procedures**

a. SOPs provide clear, concise guidance for operating personnel and implement the conclusions of locally performed HAs for explosive operations.

b. HAs and resulting SOPs will address startup, shutdown, maintenance, and emergency operations in addition to steady state operations. The preparing organization will file copies of local HAs with the original SOP in the office of the organization responsible for preparing the SOP. Any proposed operational change would require reassessment of the HA.

c. Installations and activities must have a uniform process for developing and approving SOPs. Offices of review include, but are not limited to AOs, senior quality assurance specialist (ammunition surveillance) (QASAS) offices, safety offices, environmental offices, chemical surety and radiological protection offices (where appropriate), and industrial hygiene or medical offices. Different organizations may have different but equivalent structures.

d. A pilot run, witnessed and validated by the organizational elements charged with reviewing SOPs, is a prerequisite for approval of an SOP. The pilot run is to confirm that the SOP can be safely exercised as written; that it matches the workplace, tools, and equipment; and that operators comprehend the instructions in the SOP.

e. Operations that are highly similar may be part of a single SOP. Similarity of hazard (characteristics of materials involved, similarity of means and ease of initiation, and consequences of functioning) determines which items may be combined in an SOP for an operating line or similar operation.

f. Standardize SOPs in regards to formatting. Use a table of contents to identify each part within an SOP and format and title it as follows:

- (1) Part I (see app B)—cover page and supervisor's and operator's signature pages.
- (2) Part II (see app C).
  - (a) *Table of contents*. Use the table of contents to record the mandatory parts of the SOP to standardize formatting.
  - (b) *Index of operations*. If the operation has fewer than five steps, then inclusion of an index in part II is optional but still highly recommended.
- (3) Part III—General and specific safety requirements.
- (4) Part IV—Operations.
- (5) Part V—Line layout.
- (6) Part VI—Review and summary.
- (7) Part VII—HA.
- (8) Part VIII—Unique local requirements.
- g. Do not delete unused parts of the SOP. Instead, mark them “not applicable.”

### **2–3. Essential elements of a standard operating procedure**

An SOP must contain the essential elements described in paragraphs 2–3*a* through 2–3*h*.

- a. Installations will use the standardized numbering system in appendix I to establish their SOPs.
- b. Use appendix B to create part I of the SOP, including—
  - (1) An appropriate cover sheet or title page identifying these key points—
    - (a) The installation or activity.
    - (b) The covered munitions' or explosives' descriptive operation title.
    - (c) The unique SOP number.
    - (d) The date of latest version.
  - (2) An annual or biennial review page.
  - (3) A signature page for supervisors and operators to indicate that they understand the SOP and will comply with its requirements.
- c. Use appendix C to establish an index if the explosive operation includes more than five distinct steps or stages.
- d. Appendix D provides guidance for general and specific safety requirements within the SOP. Use this section to summarize any significant warnings, notices, or other special requirements that are either generally applicable throughout the SOP or are of such importance that they must appear both in this special requirements section and in the appropriate steps. These special requirements may pertain to accountability, safety, quality, or any other pertinent topic.
- e. Establish operational procedures to complete each step in the described process using appendix E. As the source of guidance to operators, SOPs should contain the specific, step-by-step guidance necessary to complete a task, including startup, shutdown, maintenance, and emergency situations, as well as steady state operations. Photographs are often important adjuncts to clarify written instructions (particularly when operators are advised to look for a particular configuration or condition). The language throughout the SOP must reflect the needs of the operators. The key to content determination is the ability of the operators to rapidly and clearly grasp the intended information.
- f. Create a line layout, using appendix F, for comprehension of the flow of materials or other significant factors. Some functions, such as open burning, may require including a site plan for clarity.
- g. Review in accordance with appendix G.
  - (1) Active SOPs require review and revision as follows:
    - (a) Demilitarization or disposal SOPs require review and concurrence annually by all signatories.
    - (b) Toxic chemical SOPs require an annual review by the proponent and installation safety manager.
    - (c) Other active SOPs require biennial review by the organization performing the work and the safety office.
  - (2) Preparing an inactive SOP for use requires the same approval process as for a new SOP, unless operations fluctuate regularly (for example, every quarter) between active and inactive.
  - (3) Page-for-page changes are acceptable until approximately one-third of the SOP has been changed; at this point, installations will rewrite the SOP. Page changes must correspond to a change on the cover sheet that references the changes (as changed, added, deleted, or rewritten). Changed portions of text (short of total revision) require identification by bars in the page margin or other highlighting technique. Changes and revisions require the same approval as when rewriting an SOP.
  - (4) Following final approval at the installation, submit toxic chemical munitions SOPs for review to Headquarters, Chemical Materials Agency, as directed.
- h. The HA for the SOP will be prepared and included per appendix J.

## 2–4. General information for written standards

a. WSs provide clear concise guidance for operating personnel conducting nonexplosive operations and administrative duties. WSs may be as simple as a reference page to an official operational manual or technical publication, along with a listing of local environmental conditions or safety concerns the commander or supervisor needs to emphasize to ensure a safe and efficient mission when conducting nonexplosive operations. Do not use WSs to duplicate official instructions. However, WSs can be used at the discretion of the commander, or equivalent, to identify local unique procedures needed to supplement official operational manuals or technical publications.

b. Prepare WSs for all operations involving nonexplosive assets and administrative duties.

(1) Document administrative procedures, such as data input or document filing, in the desk procedure (DP) section to ensure standardization and continuity within the office or section.

(2) Use work plans, work instructions, operational manuals, and technical manuals for ammunition-related operations involving inert or nonhazardous materials. These documents will ensure high-quality characteristics are maintained and personnel safety is observed at all times.

c. HAs for WSs will address operation of equipment and machinery, personnel safety, and potential emergency situations associated with nonexplosive operations.

d. Installations and activities must have a uniform process for developing and approving WSs. Subject matter experts from AO, QASAS, safety, environmental, chemical surety or radiological protection (where appropriate), industrial hygiene, or medical offices will be part of the document review and approval process.

e. Similar to an explosive operation, the organizational elements charged with preparing the WS will conduct a pilot run. The pilot run will confirm that the nonexplosive operation can be safely conducted using tools, equipment, and workspace and that operators comprehend the instructions.

f. Nonexplosive operations that match explosive operations in regards to production steps and that can be safely executed under an approved SOP do not require an additional WS.

g. Similar nonexplosive operations, (that is, preparing brass residue for turn-in to and preparing containers for turn-in to Defense Logistics Agency Disposition Services) may be combined in a single WS, provided all safety precautions and equipment operations are covered.

h. Standardize WSs in regards to formatting. Use a table of contents to identify each part within a WS and format and title it as follows:

(1) Part I—Cover page and supervisor's and operator's signature pages.

(2) Part II.

(a) *Table of contents.*

(b) *Index of operations.* If the operation has fewer than five steps, then inclusion of an index in part II is optional but still highly recommended.

(3) Part III—General and specific safety requirements.

(4) Part IV—Operations.

(5) Part V—Line layout.

(6) Part VI—Review and summary.

(7) Part VII—HA.

(8) Part VIII—Unique local requirements.

i. Do not delete unused parts of the WS. Instead, mark them as “not applicable.”

j. Review WSs once annually.

k. Title WSs for administrative functions as DPs and prepare them as follows:

(1) The organizational element responsible for the administrative duty will prepare the DP and include clear and concise instructions to ensure continuity of the process. DPs will be reviewed and approved by the first-line supervisor who has operational control over the organizational elements impacted by the DP.

(2) The DP will should include the following parts:

(a) Cover page, including—

1. i. Command.

2. ii. DP number.

3. iii. Subject.

4. iv. Supervisor's signature and date of approval.

(b) Part I—Objective.

(c) Part II—Safety. Do not list normal office hazards in the DP. Only include safety precautions that would exceed the normal office hazards. For instance, if the DP required an employee to retrieve documents from within the working bay of a surveillance workshop, then the DP should emphasize the requirement for safety-toed shoes or protective eyewear when entering the work area. Typical administrative DPs will not have safety precautions.



(d) Part III—Administrative steps or actions. Be as accurate as possible, providing screenshots for computer-related tasks and links or digital photos (if allowed) of file folders or cabinets. Processes that are second nature to individuals who accomplish them on a daily basis and who have created shortcuts or quick links can prove to be extremely time-consuming and difficult to coworkers that are abruptly placed in those positions. Be as brief, but also as thorough, as possible.

## **Appendix A**

### **References**

#### **Section I**

##### **Required Publications**

###### **AR 385–10**

The Army Safety Program (Cited in para J–1*d*.)

###### **DA Pam 385–30**

Risk Management (Cited in para J–1*f*.)

###### **DA Pam 385–64**

Ammunition and Explosives Safety Standards (Cited in para J–1*e*.)

###### **MIL–STD–882E**

System Safety (Cited in para J–2*a*.) (Available at <https://quicksearch.dla.mil/>.)

#### **Section II**

##### **Related Publications**

A related publication is a source of additional information. The user does not have to read it to understand this publication. AMC regulations are available at <https://hqamc.aep.army.mil>. Code of Federal Regulations (CFR) material is available at <https://www.ecfr.gov/>. DoD material is available at <https://www.esd.whs.mil/dd/>. USC material is available at <https://uscode.house.gov/>.

###### **AMC–R 350–4**

Training and Certification Program for Personnel Working in Ammunition Operations

###### **AMC–R 385–10**

U.S. Army Materiel Command (AMC) Safety Program

###### **AR 25–30**

Army Publishing Program

###### **DA Pam 385–10**

Army Safety Program

###### **DA Pam 385–61**

Toxic Chemical Agent Safety Standards

###### **DA Pam 742–1**

Ammunition Surveillance Procedures

###### **DoD 4145.26–M**

DoD Contractor’s Safety Manual for Ammunition and Explosives

###### **DoDI 6055.01**

DoD Safety and Occupational Health (SOH) Program

###### **29 CFR**

Labor

###### **42 CFR 73**

Select Agents and Toxins

###### **49 CFR 172**

Hazardous Materials Table, Special Provisions, Hazardous Materials Communications, Emergency Response Information, Training Requirements, and Security Plans

###### **10 USC 101(e)(4)**

Military munitions

###### **42 USC 2011**

Congressional declaration of policy (Atomic Energy Act of 1954)

**49 USC 5101**

Purpose

**49 USC 5102**

Definitions

**49 USC 5103**

General regulatory authority

**49 USC 5104**

Representation and tampering

**49 USC 5105**

Transporting certain highly radioactive material

**49 USC 5106**

Handling criteria

**49 USC 5107**

Hazmat employee training requirements and grants

**49 USC 5108**

Registration

**49 USC 5109**

Motor carrier safety permits

**49 USC 5110**

Shipping papers and disclosure

**49 USC 5112**

Highway routing of hazardous material

**49 USC 5113**

Unsatisfactory safety rating

**49 USC 5114**

Air transportation of ionizing radiation material

**49 USC 5115**

Training curriculum for the public sector

**49 USC 5116**

Planning and training grants, monitoring, and review

**49 USC 5117**

Special permits and exclusions

**49 USC 5118**

Hazardous material technical assessment, research and development, and analysis program

**49 USC 5119**

Uniform forms and procedures

**49 USC 5120**

International uniformity of standards and requirements

**49 USC 5121**

Administrative

**49 USC 5122**

Enforcement

**49 USC 5123**

Civil penalty

**49 USC 5124**

Criminal penalty

**49 USC 5125**

Preemption

**49 USC 5126**

Relationship to other laws

**49 USC 5127**

Judicial review

**Section III****Prescribed Forms**

This section contains no entries.

**Section IV****Referenced Forms**

Unless otherwise indicated, DA forms are available on the APD website (<https://armypubs.army.mil>).

**DA Form 11–2**

Internal Control Evaluation Certification

**DA Form 2028**

Recommended Changes to Publications and Blank Forms

**DD Form 626**

Motor Vehicle Inspection (Transporting Hazardous Material) (Available at <https://www.esd.whs.mil/dd/>.)

## Appendix B

### Standard Operating Procedure Preparation Instructions

#### B-1. Instructions to prepare standard operating procedure cover sheets, supervisor's statements, and operator's statements

Include the SOP cover sheet in part I of the SOP, as illustrated in figure B-1. Information applicable to each numbered line not listed below is considered self-explanatory.

- a. 1—Installation. Insert the name of the installation.
- b. 2—Item. Indicate the appropriate information as follows:
  - (1) Complete nomenclature. Use the standard catalog nomenclature.
  - (2) DoD Ammunition Code.
  - (3) Hazard classification, packaged, and fire symbol.
  - (4) Hazard classification, unpackaged, and fire symbol.
  - (5) Chemical hazard symbols.

*Note.* Complete block with “see appendix,” “see index,” or “not applicable,” as required. For SOPs involving multiple items, it is permissible to refer to another section for information, such as DoD Ammunition Code, nomenclature, net explosive weight, and fire symbol.

- c. 3—Operation. Indicate the type of activity, such as renovation, preservation, packaging, demilitarization, transportation, inspection, or test, as applicable. The operation should agree with SOP number code and operations listed in table B-1.

**Table B-1**  
**Standard operating procedure number code operations**

Type of operation code ammunition operating element	Quality assurance element
A - Administration	Q - Administration
B - Renovation test	R - Visual inspection and test
C - Modification	S - Function and trace test
D - Conversion inspections	T - Safety and logistics inspections
E - Preservation and packaging operations	U - Maintenance inspection operations
F - Nondestructive testing	V - Demil inspection operations
G - Demil (detonation)	W - General
H - Demil (burning)	
I - Demil-washout (steam-out)	
J - Demil-disassembly	
K - Demil-other (including furnace)	
L - Shipping, receiving, transport, and re-warehousing	
M - General	
N - Explosive loading/LAP/manufacturing	
P - Research/developing testing	

**SOP Cover Sheet  
Part I**

**1. RED ARMY DEPOT, STANDARD OPERATING PROCEDURE FOR**

**2. ITEM:** a. [see B-1.B]

b. [see B-1.B]]

c. Packaged: [see B-1.B]

d. Unpackaged: [see B-1.B]

e. Chemical Hazard Symbol: [see B-1.B]

**3. OPERATION:** [see B-1.C.]

**4. ESTIMATED DAILY PRODUCTION RATE:**  
[see B-1.D.]

**5. ORGANIZATION SYMBOL:** [see B-1.E.]

**6. SOP NO:** [see B-1. F.] **DATE:** [ddmmyyyy]

a. **REV NO.** [Number] **DATE:** [ddmmyyyy]

b. **CHANGE NO.** [Number] **DATE:** [ddmmyyyy]

**7. AUTHORITY:** [see B-1.I.]

**DATE:** [ddmmyyyy]

**8. PREPARED BY:**

[First, Last Name]

**DATE:** **TITLE:** EQUIPMENT SPECIALIST  
DSN/COM: XXX-XXXX/XXX-XXX-XXXX

**9. REVIEWED BY:**

[First, Last Name]

**TITLE:** CHIEF MAINTENANCE BRANCH

**10. SUBMITTED BY:**

[First, Last Name]

**TITLE:** CHIEF PLANNING BRANCH

**11. CONCURRENCES:**

OFFICE	SIGNATURE/DATE	TITLE
AMMUNITION OPERATION	[First, Last Name]	DIRECTOR, AMMO OPERATION
SURVEILLANCE DIVISION	[First, Last Name]	CHIEF, AMMO SURV DIVISION
ENVIRONMENTAL	[First, Last Name]	CHIEF, ENVIRONMENTAL OFFICE SAFETY
	[First, Last Name]	CHIEF, SAFETY OFFICE

**12. APPROVAL:** [First, Last Name]  
COL, LG  
COMMANDING

**DATE:** [ddmmyyyy]

**Figure B-1. Format for standard operating procedure cover sheet**

<b>SOP NO:</b> [see B-1.F.] <b>REV:</b> [Number] <b>CHG:</b> [Number] <b>DATE:</b> [ddmmyyyy]		
<b>13. ANNUAL/BIENNIAL REVIEW</b>		
DATE	SIGNATURE	TITLE
[ddmmyyyy]	[Sign here]	(ORIGINATOR)
[ddmmyyyy]	[Sign here]	CHIEF, AMMUNITION SURVEILLANCE
[ddmmyyyy]	[Sign here]	DIRECTOR, AMMUNITION OPERATIONS
[ddmmyyyy]	[Sign here]	CHIEF, ENVIRONMENTAL OFFICE
[ddmmyyyy]	[Sign here]	CHIEF, SAFETY OFFICE
APPROVAL [Sign here] COMMANDING		DATE [ddmmyyyy]

**Figure B-1. Format for standard operating procedure cover sheet—continued**

- d.* 4—Estimated daily production rate. Enter the number and units, such as items, rounds, pounds, and gallons, if applicable.
- e.* 5—Organization symbol. Insert the office symbol for the responsible organization (office of record).
- f.* 6—SOP no. and date. The date will be the date of approval. The numbering system should be consecutive and arranged so as to avoid duplication of numbers by separate organization of the same installation. Structure the SOP number according to appendix I.
- g.* 6a—Rev. no. and date. The date will be the date of approval. Enter the revision number when the revision of the SOP is complete (for example, write “rev. 1”).
- h.* 6b—Change no. and date. The date of approval of the revision will be the same date the approval is signed in position 12. Insert the change number to either the basic or revised SOP, whichever is applicable.
- i.* 7—Authority. Indicate the appropriate technical reference (DMWRs, test procedures, LOIs, supply bulletins, technical orders, and so forth) which authorizes conduct of the operation. The date of reference, including changes, should be reflected.
- j.* 8–10—Prepared by, reviewed by, submitted by. Record the name and title of the individual responsible for each of these efforts and include the telephone number of preparer.
- k.* 11—Concurrence. Indicate the office, title, name, signature, and date for those concurrences. Where Government-owned, contractor-operated plants are concerned, it may be appropriate for members of the contracting officer’s representative’s staff, the contractor staff, or both to be included in concurrence and signature process.
- l.* 12—Approval. Prepare names of approving officials. Indicate office, title, name, signature, and date.
- m.* 13—Annual or biennial review. Add the date and signature blocks for concurrence offices with title indicating review for adequacy. Staff this review in the same manner as the original review or approval procedure. A continuation sheet may be added for successive annual or biennial signature blocks (see fig B-1).

## **B-2. Instructions to prepare the supervisor’s statement**

- a.* Include the SOP’s supervisor’s statement in part I of the SOP and place it directly beneath the cover sheet in the format shown in figure B-2.
- b.* Each supervisor using the SOP will be required to sign this statement.

Format for Supervisor's Statement	
SOP NO.: [see B-1.F]    REV NO.: [see B-1.G.]    CHANGE NO: [see B-1.H.]    DATE: [ddmmyyyy]	
1. THE SUPEVISOR WILL SIGN THIS STATEMENT:	
A. WHEN FIRST ASSIGNED AS SUPERVISOR OF THE OPERATION.	
B. WHEN AN APPROVED CHANGE IS MADE TO THE SOP.	
C. AT LEAST ONCE PER QUARTER DURING CONTINUING OPERATIONS.	
D. AFTER ABSENCE FROM THE JOB IN EXCESS OF 15 CONSECUTIVE WORKDAYS.	
2. I HAVE PERSONALLY REVIEWED EACH OF THE OPERATIONAL STEPS OF THE SOP AND HAVE NO QUESTION IN MY MIND THAT THE OPERATION CAN BE PERFORMED SAFELY, EFFICIENTLY, AND IN COMPLIANCE WITH ENVIRONMENTAL RESTRICTIONS NOTED IN THE SOP. I HAVE VERIFIED TO MY SATISFACTION THAT OPERATORS HAVE BEEN TRAINED AND ARE CAPABLE OF PERFORMING THEIR PART OF THE OPERATION IN A SAFE AND EFFICIENT MANNER AND HAVE INSTRUCTED THEM TO FOLLOW THE SOP WITHOUT DEVIATION.	
SUPERVISOR'S PRINTED NAME: [First, Last Name]	
SUPERVISOR SIGNATURE	DATE
1. [Sign here]	[ddmmyyyy]
2. [Sign here]	[ddmmyyyy]
3. [Sign here]	[ddmmyyyy]
4. [Sign here]	[ddmmyyyy]
5. [Sign here]	[ddmmyyyy]
6. [Sign here]	[ddmmyyyy]
7. [Sign here]	[ddmmyyyy]

Figure B–2. Format for supervisor's statement

### B–3. Instructions to prepare operator's statement

- Include the SOP's operator's statement in part I of the SOP and place it directly beneath the supervisor's statement in the format shown in figure B–3.
- Each operator will be required to sign this statement.

*Note.* Use one copy of the SOP to collect all supervisor and operator signatures.



**Format for Operator's Statement**

SOP NO.: [see B-1.F.]      REV NO.: [see B-1.G.]      CHANGE NO.: DATE: [ddmmyyyy]

1. THE OPERATOR WILL SIGN THIS STATEMENT:

- A. WHEN FIRST ASSIGNED AS SUPERVISOR OF THE OPERATION.
- B. WHEN AN APPROVED CHANGE IS MADE TO THE SOP.
- C. AT LEAST ONCE PER QUARTER DURING CONTINUING OPERATIONS.
- D. AFTER ABSENCE FROM THE JOB IN EXCESS OF 15 CONSECUTIVE WORKDAYS.

2. I HAVE PERSONALLY REVIEWED EACH OF THE OPERATIONAL STEPS OF THE SOP AND HAVE NO QUESTION IN MY MIND THAT THE OPERATION CAN BE PERFORMED SAFELY, EFFICIENTLY, AND IN COMPLIANCE WITH ENVIRONMENTAL RESTRICTIONS NOTED IN THE SOP. I HAVE VERIFIED TO MY SATISFACTION THAT OPERATORS HAVE BEEN TRAINED AND ARE CAPABLE OF PERFORMING THEIR PART OF THE OPERATION IN A SAFE AND EFFICIENT MANNER AND HAVE INSTRUCTED THEM TO FOLLOW THE SOP WITHOUT DEVIATION.

NAME/SIGNATURE	DATE	OPERATION NUMBER
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]
[First, Last Name] [signature]	[ddmmyyyy]	[see SOP Operations No.s]

**Figure B–3. Format for operator's statement**

## **Appendix C**

### **Table of Contents and Index of Operations**

#### **C-1. Table of contents**

Include the table of contents in part II of the SOP and identify these parts of the SOP—

- a.* Part I—Cover page and supervisor's and operator's signature pages.
- b.* Part II—Table of contents and index of operations.
- c.* Part III—General and specific safety requirements.
- d.* Part IV—Operations. This part may be subdivided when various assets are worked under an SOP. Each subpart will include specific hazards associated with the each type of asset. For example, a surveillance SOP to inspect class V at a workshop can include subparts for the various types of munitions (such as small arms, medium caliber, and large caliber).
- e.* Part V—Line layout.
- f.* Part VI—Review and summary.
- g.* Part VII—HA.
- h.* Part VIII—For local use to capture any unique requirements, terminology, or instructions needed to conduct a safe and efficient operation.

#### **C-2. Index of operations**

Include the index of operations in part II of the SOP if the operation includes more than five steps. Complete the index of operations as illustrated in figure C-1.

Format for Index of Operations					
SOP NO.: [see B-1.F.]		REV: [see B-1.G.]		DATE [ddmmyyyy]	
OPER. NO.	BLDG NO. OR SITE	BAY NO.	INDEX OF OPERATIONS TOTAL EXPLOSIVES ALLOWED	DESCRIPTION OF OPERATION	PAGE NO.
1	4650	1	425 lb.	Unpack	4
2	4650	2	200 lb.	Disassembly	5
3	4650	3	200 lb.	Cleaning	6
4	4650	4	200 lb.	Painting	7
5	4650	5	200 lb.	Reassembly	8
6	4650	6	425 lb.	Repack	9

Remarks

- Operation consists of unpacking, disassembly, and performing maintenance on item and packing material, as required.
- Exemption E-16-64 is in effect as pertains to the location of Bldg. 4650 to guard shelter.
- Operation No. 6, Change 1: To provide for receipt of boxes from Operation No. 1.
- Operation Nos. 3 and 4, Change 2: To add operation to clean and paint projectiles.
- Operation No. 2, Change 3: To provide for inspection of propelling charge.
- References:
  - DA Pamphlet (Pam) 385-64
  - TM 43-0001-28
  - DA Pam 742-1
  - AMC-R 700-107
  - DOD 4145.26-M
  - Joint Hazard Classification System

This SOP supersedes xxxx-SOP, [ddmmyyyy]

Figure C-1. Format for index of operations

- Column 1.* Indicate the operation number.
  - Column 2.* Identify the buildings or sites where the operation is being conducted.
  - Column 3.* Insert the bay or room numbers to show the exact location of the operation. Bay numbers will coincide with line layout drawings submitted. Enter not applicable (that is, write "N/A") for locations without separate bays or rooms.
  - Column 4.* Indicate the total explosive limits for individual bays listed in column 3 by number of rounds. For locations without individual bays or rooms, the operational limit will be established for the entire location.
- Note.* Small caliber ammunition (hazard class, division 1.4) and chemical ammunition without bursters may be listed by number of rounds or another manner that will be meaningful to supervisors and operators. Explosive limits in a bay will include all items in transit (that is, on conveyors, skids, or trays). Assure explosive limits comply with the approved facility site plan.
- Column 5.* Insert a description of the operations (for example, write "unpack" or "disassembly").
  - Column 6.* Give the page number.
  - Remarks.* Briefly describe the work to be performed. List waivers, exemptions, specific authorizations, or approved deviations that apply to this operation and insert the reason for a change or revision. If an SOP supersedes an SOP of another number, state the number of the SOP superseded. List references used to prepare the SOP and required to conduct the operation (in addition to any listed on line 7 of the cover sheet). List pages or operations that are changed (excluding revisions) in the remarks section.

## Appendix D

### General and Specific Safety Requirements

#### D–1. General safety requirements

List general and specific safety requirements in part III of the SOP. Additionally, these requirements can be included at the operational step within part IV to emphasize a particular hazard or warning unique to the mission. In this section—

*Note.* The following list should be used only as a guide in preparing general safety requirements. Instructions should be added, deleted, or modified to be directly applicable to the operations covered by the SOP.

- a.* The applicable portion of this SOP will be conspicuously posted in rooms or bays involved in the operation. The supervisor will maintain a complete copy of the SOP and be responsible for the enforcement of its provisions.
- b.* There will be no deviation or change from the approved SOP.
- c.* Take care to expose a minimum number of personnel for a minimum time to a minimum amount of hazardous material consistent with safe and efficient operations.

#### D–2. Specific safety requirement

- a.* Organizations preparing the SOP will ensure that any unique or local conditions that will have a direct impact on the AO are identified as specific safety requirements related to the mission. Some operations will not have specific safety requirements.
- b.* When listed in part III, specific safety requirements will be accompanied by the item or operational step they apply to for clarification to the operators.
- c.* Supervisors will ensure specific safety requirements are listed and followed within the SOP. Examples of specific safety requirements may include, but are not limited to—
  - (1) A pitch-in barricade (ammunition peculiar equipment (APE) 1231M1) will be present in the bay when inspecting or handling fragmentation grenades.
  - (2) Due to regional weather conditions that include fast-moving, extreme lightning storms during summer months, operators will continuously monitor weather and be prepared to evacuate explosive locations. Operators working in a certain area will evacuate to the safe house due to the distance back to the operations building. Operators will remain in the safe house with its doors closed until given the all-clear from the operations or surveillance chief.

## **Appendix E**

### **Instructions to Prepare Operations Format**

#### **E-1. Illustration**

The illustration of operations format (see fig E-1) is not intended to cover all situations and the reflected information does not necessarily have complete or accurate steps. The illustration has been provided solely for the purpose of adding clarification to the written instructions below, applicable to lines A through L. The two-column format illustrated in figure E-1 is one example of an operations format. SOPs may be prepared in alternate formats (one-column or three-column) as long as they contain all the information shown. The format used must remain consistent throughout the SOP. Numbering all steps, completely describing operations, and giving specific instructions (see para E-2j) are required regardless of format used. Single and multicolumn formats may not be used in the same SOP.

### OPERATIONS FORMAT

<p>A. STANDARD OPERATING PROCEDURES FOR [see E-1.A.]</p>       <p>G. OPERATIONS: [see E-1.G.]</p> <p>H. EXPLOSIVE LIMITS    UNITS: [see E-1.H.]</p> <p>I. PERSONNEL LIMITS    OPERATORS: [see E-1.I.]</p> <p>J. STEP NO. [see E-1.J.]    DESCRIPTION</p>	<p>B. OPERATION NO.: [see E-1.B.]</p> <p>C. SITE/BUILDING/BAY NO. [see E-1.C.]</p> <p>D. SOP NO. [see E-1.D.]    DATE [ddmmyyyy]</p> <p>E. REV NO. [see E-1.E.]    DATE [ddmmyyyy]</p> <p>F. CHANGE NO. [see E-1.F.]    DATE [ddmmyyyy]</p>       <p>EXPLOSIVES LBS: [see E-1.H.]</p> <p>TRANSIENTS: [see E-1.H.]</p> <p>SPECIFIC INSTRUCTIONS</p>
--	---

#### (SAFETY, OPERATIONAL, QUALITY CHECKS)

- |   |  |
|---|--|
| <p>1. Receive projectiles by power monorail from Operation No. 2.</p><br><p>2. Activate paint spray booth.</p><br><p>3. Spray paint cleaned projectile.</p><br><br><br><br><br><br><br><p>4. Projectiles will continue on monorail from Operation No. 4.</p><br><p>K. SPECIAL REQUIREMENTS: [see E-1.K.]</p><br><p>1. DS-3: Projectile free of dirt, chips, grease, rust and other foreign material. Visual-Minor: AQL: 0.65</p> <p>2. DS-4: Primer and paint coverage is complete: Visual-Minor: AQL: 0.65</p> <p>3. Surveillance will perform required grounding/continuity test.</p> | <p>2. (S) Ensure that filters are clean and exhaust fan in paint spray booth is operating properly prior to start of operation.</p><br><p>3a. (O) Rotating band cover must be present prior to painting.</p><br><p>3b. (O) A primer coat of MIL-P-11414D will be sprayed on to cover bare metal exposed on projectile.</p><br><p>3c. (O) Spray paint exterior surface of projectile with olive drab TT E-516 COLOR NO. 34088 using finish No. 20-1 of MIL-STD-171D.</p><br><p>3d. (QC) Inspect workmanship (DS-3) and paint coverage (DS-4).</p> |
|---|--|

Figure E-1. Operations format

4. Maintenance personnel will perform required inspection and preventive maintenance on installed equipment. (This type of statement would only be required in the special requirements of the first operation where monorail is used).

**L. EQUIPMENT, TOOLS, GAGES, AND SUPPLIES: [see E-1.L.]**

ITEM	QTY RQRD	SPEC NO OR DWG. NO.	MGMT CONTROL STOCK NUMBER OR NSN
1. Paint, OD enamel	as required	TT-3-516	8010-00-297-2216
2. Paint Spray Equipment	1 each	APE 1045	
3. Conveyor Monorail	1 each	APE 1044	
4. Paint System Hot Spray, Portable	1 each	Commercial	
5. Respirator, Paint Spray	1 each	GGG-M-125/A	5240-01-211-3592
6. Primer, Coating Lacquer, Rust Inhibiting	as required		8010-00-597-7854

**Figure E-1. Operations format—continued**

## E-2. Instructions

*a. A—SOPs for.* Indicate the operation and nomenclature of the item being worked (for example, write “Preservation and Packaging of 155-MM HE M107”).

*b. B—Operation no.* Indicate the step of the operation being explained.

*c. C—Location/Bay no.* Show site, building, bay, room, or cubicle number (as applicable).

*d. D—SOP No./Date.* Enter the SOP number and the current date.

*e. E—Rev. No./Date.* Enter the revision number and the date that this SOP changed.

*f. F—Change No./Date.* Enter the change number and the date that this SOP changed.

*g. G—Operation.* Indicate the title of the operation (for example, write “pull apart complete round, defuze, assemble cartridge case to the projectile, and so forth”).

*h. H—Explosive limits.* Indicate the number of units and pounds determined to be necessary, consistent with safe and efficient operation. Where complete items are in the same bay or operation, list the quantity and explosive weight limits for each. Identify separate components also by quantity and total explosive weight.

*i. I—Personnel limits.* When used in conjunction with establishing personnel limits, an operator is defined as any individual who is present at a work station permanently or intermittently and performs work in the bay (for example, inspector, operator, and leader). A transient does not perform work in the bay.

*Note.* Operators as listed on personnel-limit signs bear no relationship to the total manpower requirements for the job. They only indicate the maximum number of personnel that are permitted to be exposed to a particular hazard. When personnel limits are exceeded, immediately halt all explosive operations until personnel limits are reduced to approved operating limits. Additionally, halt explosive operations when transient personnel enter the work area to conduct functions unrelated to the operation (that is, building maintenance or water delivery). Explosive operations are allowed to continue for transients conducting official visits or reviews of the operation as long as the set personnel limits are not exceeded.

*j. J—Step no./description of operations/specific instructions.* The procedural details of work to be performed will be listed under the description section in a numbered and logical sequence. The description must be sufficient to allow the operator to accomplish the task in a safe and technically correct manner (see fig E-1).

(1) Specific instructions are intended to furnish information that applies to one specific step of the operation and which has not been included in the actual description of physical work performed. Details to be listed here include quality characteristics, specific safety equipment or clothing required, specific safety precautions to be taken, and technical instructions necessary for task accomplishment (see fig E-1 for illustrations, examples, and explanations). All specific instructions will be identified as follows to indicate the step referred to and the type of instruction: safety

(S), operational (O), quality checks (QC), or any combination of the above. When more than one specific instruction is listed for a step, letter the paragraphs as noted in step 3 of figure E-1.

(2) Where conditions mandate special emphasis at a particular step or steps, a changed typeface or spacing is necessary to set off the special emphasis material (for example, warnings that indicate the presence of a situation that can result in immediate bodily harm). Cautions indicate the presence of a situation requiring special attention to serious, but not immediate, adverse consequences, such as chronic health problems resulting from failure to follow good hygiene practice, a reject part.

*Note.* Provide additional instructions in special circumstances.

*k. K—Special requirements.* This space will include instructions that are required and apply to the entire operation or bay and they would not be listed in line J. Instructions may concern safety, technical aspects of the operation, defect standards, or equipment inspection requirements (see fig E-1 for illustrations). Items covered in line J of the SOP need not be duplicated under line K. Surveillance or quality control inspection requirements may be listed under the special requirements section for each operation or be included as a separate operational page covering the surveillance or quality control inspections.

*l. L—Equipment, tools, gages, and supplies.* This space will list all materials, equipment (standard APE, locally fabricated equipment, and nonstandard APE), specific hand tools that are unique to operation, specific safety equipment, or other items required to support operation. It is not necessary to list those tools that are commonly used in most operations (for example, banding cutters, hammers, and screwdrivers) unless they must be sparkproof. Use specific nomenclature, including item description, national stock number, or specification number, to adequately identify listed equipment, tools, gages, and supplies (see fig E-1).



## Appendix F

### Instructions for Preparation of Line Layout

#### F-1. Line layout

A clear, legible line layout must accompany each SOP conducted inside buildings. Prepare line layouts in the format shown in figure F-1. A layout should show the structural material of the building, fire protection, location of dividing walls, operational shields, and permanently installed equipment. Operational shields must be detailed to show the type of material used, height, and thickness. List permanently installed equipment whether or not it is used on the specific operation. Identify each bay or room by a numeral or letter. Use a directional symbol to indicate true north. Also, show the building number and the applicable SOP number.

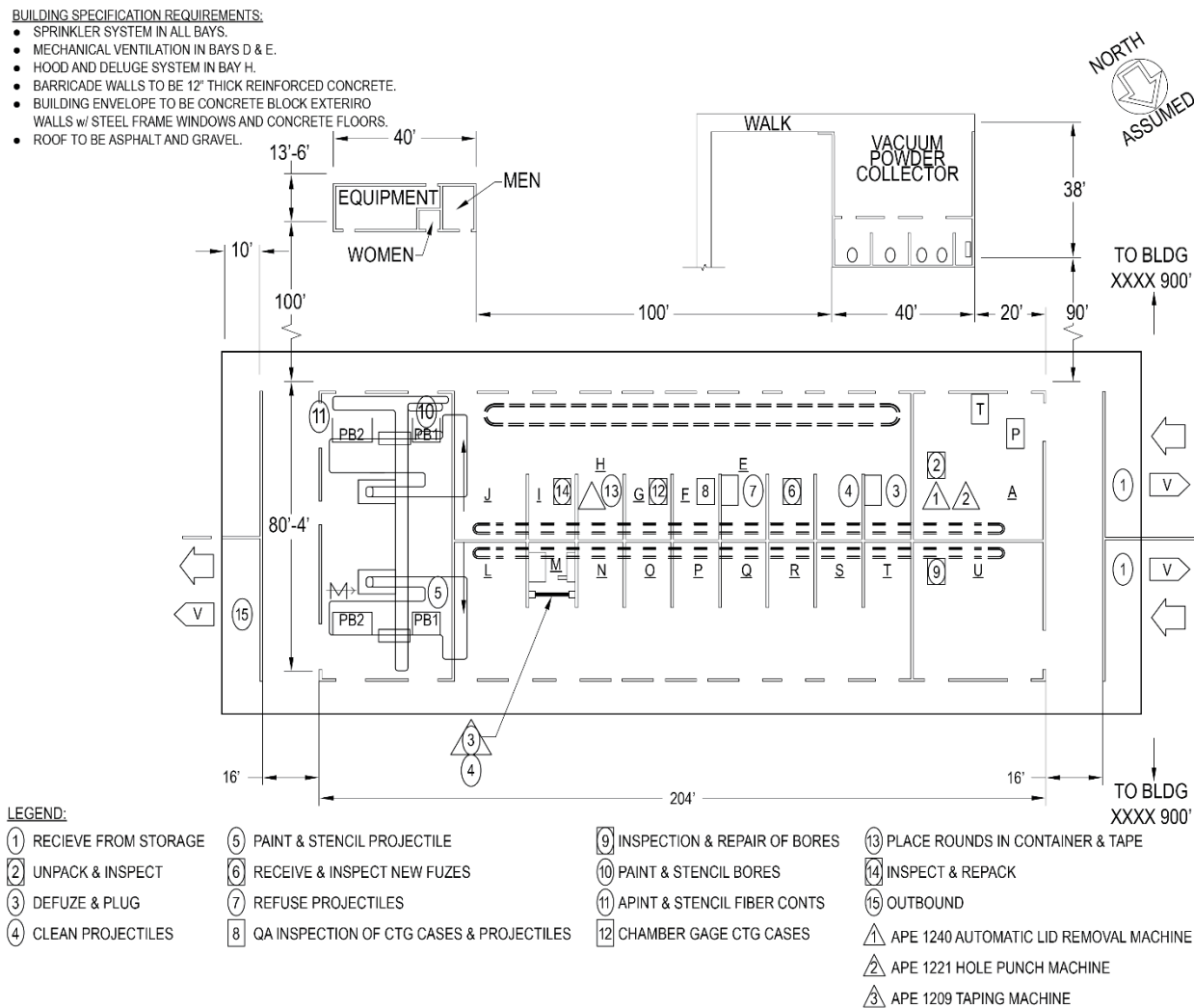


Figure F-1. Line layout

#### F-2. Standardized symbols

Depict the operational sequence using standardized symbols, as illustrated in figure F-2. Show the location of pallets, tables, APE, and so forth, where they will be used. Use a legend to briefly explain the operations, inspections, and location of pallets, tables, APE, and so forth. Assign operation numbers to agree with those in the index of operations and operations format.

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## **STANDARDIZED SYMBOLS**













	<b>STORAGE</b>
	<b>OPERATION</b>
	<b>INSPECTION - VERIFICATION OR ACCEPTANCE</b>
	<b>INSPECTION - OPERATION - IN PROCESS</b>
	<b>PRODUCTION EQUIPMENT</b>
	<b>TABLES, DOLLIES, WORK BENCHES, TRUCKS, PALLETS, ETC.</b>
	<b>VAN</b>
	<b>MONORAIL</b>
	<b>POWER CONVEYOR</b>
	<b>ROLLER CONVEYOR</b>
	<b>PAINT BOOTH</b>
	<b>OPERATIONAL SHIELD</b>

Figure F-2. Standardized symbols

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## **Appendix G**

### **Procedures for Review of Standard Operating Procedure**

#### **G–1. Installation level**

*a.* Staff have approved the SOP within the installation's safety and environmental offices to produce the most accurate and complete procedures possible. Forward appropriate technical data (for example, scope of work, drawings, LOIs, work orders, waivers, and exemptions) containing special instructions issued by commands and local HAs with the SOPs. The DMWRs, technical manuals, technical orders, and supply bulletins used to prepare the SOP need not be forwarded.

*b.* The preparing element will incorporate changes recommended by safety or environmental offices into the SOP. Comments or suggested changes will be incorporated at the discretion of the commanding officer.

#### **G–2. Explosives safety review**

*a.* All SOPs will be screened and a 100-percent explosives safety review will be performed by a career program 12 (CP12) Level 1 Certified Explosive Safety Professional (L–1 CESP). Installations that have no local CP12 L–1 CESP will coordinate with their next higher command for this support. Forward comments and recommendations from the L–1 CESP to the installation commander with copies furnished to the preparing office, local safety office, and appropriate major support command's safety office.

*b.* SOPs submitted by installations will be reviewed by the CP12 L–1 CESP primarily for compliance with Army explosives safety standards. Where noted by the reviewer, comments may also be provided addressing—

- (1) Methodology and productivity.
- (2) Equipment.
- (3) QA checks and ammunition surveillance inspection plans.
- (4) Storage.
- (5) Transportation.
- (6) Security.
- (7) Environmental requirements.

*c.* Make an immediate notification of critical explosives safety deficiencies in SOPs to installations at the time the SOP is reviewed.

## **Appendix H**

### **Instruction for Preparation of the Summary Sheet**

The format for a summary sheet for submittal of SOPs is shown in figure H-1. This information is required for each SOP change or revision. Paragraphs H-1 through H-5 describe how to complete the summary sheet.

#### **H-1. Item 1**

Fill in as required.

#### **H-2. Items 2-4**

Check one block each.

#### **H-3. Item 5**

Check one block and fill in dates as applicable.

#### **H-4. Item 6**

Check or fill in as required.

#### **H-5. Item 7**

Check block or blocks as required.

### SUBMITTAL SUMMARY SHEET

1. Installation: [e.g. Fort Bragg]  
Date Submitted: [ddmmyyyy]  
SOP No. [see B-1.F.]
2. Reason for Submittal:  
[choose all that apply]  
New  
Revision  
Change
3. Procedure Involve Material  
That is: [choose all that apply]  
Explosive  
Radioactive  
Chemical  
Surety Material  
Other (specify)
4. Type SOP  
[choose all that apply]  
Preservation and Packaging  
Demilitarization  
Receipt, Storage, Transportation and Issue  
Inspection/Surveillance/Test
5. Operation covered by SOP  
[choose all that apply]  
  
Operation is underway and will conclude.  
[choose all that apply]  
Operation is scheduled to start on or about and conclude.  
Operation is conducted intermittently.  
Operation is conducted on a continuing basis.
6. Hazard Analyses  
[choose all that apply]  
Is required for critical operation number (s)  
Is attached as an enclosure.  
Is not attached. Provide reason:  
Hazard Analyses were performed by:

Figure H-1. Submittal summary sheet

7. SOP Validation

[choose all that apply]

Phase 1 was accomplished

Was not accomplished

Phase 2 was accomplished

Was not accomplished

Phase 3 was accomplished

Was not accomplished

Validation Not Required

**Figure H-1. Submittal summary sheet—continued**

## Appendix I

### Standardized Standard Operating Procedure Numbering System

To maintain a consistent numbering format for SOPs, a four-part numbering system is recommended for all Army organizations. Other organizations and contractors may use locally approved numbering systems as long as the installation or organization and type of operation is identified. An example of an SOP number is CAAA–D544–E–002 (see paras I–1 through I–4 for more information on each part of the SOP number.)

#### I–1. Part 1—Installation code

A four-letter code identifies the installation; for example, crane Army ammunition activity is CAAA and Fort Hood is Hood.

#### I–2. Part 2—Department of Defense identification code

List the Department of Defense identification code (DoDIC) of the item to which the SOP applies. When multiple DoDICs of the same letter are included (G880–G881, G882), the letter will be followed by three zeroes (for example, G000). When DoDICs of more than one letter are included (G881, D544, H841), the operation involves ammunition or explosives in general, or a DoDIC is not assigned to the item, four zeroes will be entered (0000).

#### I–3. Part 3—Operation code

A one-letter operation code indicates the type of operation (see table I–1).

#### I–4. Part 4 Sequence number

Conventional AOs will use numbers 001 through 300 and the QA team will use 301 through 500. Additional numbers may be used if required to meet mission needs.

**Table I–1**

**Type of operation code**

<b>Ammunition operating element</b>	<b>QA element</b>
A—Administration	Q—Administration
B—Renovation Test	R—Visual Inspection and Test
C—Modification	S—Function & Trace Test
D—Conversion Inspections	T—Safety & Logistics Inspections
E—Preservation & Packaging Operations	U—Maintenance Inspection Operations
F—Nondestructive Testing	V—Demil Inspection Operations
G—Demil (Detonation)	W—General
I—Demil-Washout (Steam-out)	
J—Demil-Disassembly	
K—Demil-Other (including Furnace)	
L—Shipping, Receiving, Transport, and Rewarehousing	
M—General	
N—Explosive Loading/Load Assemble Pack/Manufacturing	
P—Research/Developing Testing	

## Appendix J

### Requirements for Performing Hazard Analysis

#### J-1. Hazard analysis requirements

- HAs are required for all operations involving handling and processing of energetic and hazardous materials.
- Each SOP must be based upon and supported by an HA. The HA will become a permanent part of the SOP of record upon completion of staffing.
- All new SOPs require an HA prior to development and staffing. An example of an HA is illustrated in table J-1.

**Table J-1**  
**Hazard analysis**

<b>Hazard Analysis</b> SOP: RC-0000-L-004 Date: 13 September 2015					
Operation: Loading/Unloading Vehicles and Aircraft			Preparer: Name		
Part	Hazard	Hazard effect	Initial risk assessment code	Corrective category or preventive action	Final risk assessment code
1. Load/unload vehicle	Vehicle collision, Dropping material	Personnel or property damage	I C 2	Use ground guides when loading or unloading vehicles. Set brakes, chock wheels, maintain compatibility. Inspect vehicle using DD Form 626 (Motor Vehicle Inspection (Transporting Hazardous Material)). All driver certifications valid. Forklift has current load test date.	II E 4
2. Secure load	Load shifting, drop material	Personnel and property damage	I C 2	Load will be centered on vehicle and loaded per appropriate load drawings. Use of appropriate blocking and bracing will be adhered to and load will be secured with tie-down straps.	II E 4
3. Transportation from Red Creek Army Depot to Red Creek Airport	Road condition; condition of trucks, drivers	Personnel and property damage	I C 2	Ensure that all drivers are properly trained and licensed on equipment; perform preventive maintenance checks and services on vehicles. Check weather forecast, traffic reports and road condition 72 hours, 48 hours, 24 hours, and 1 hour prior to departure.	II E 4
4. Airport operations	Load shifting, drop material	Personnel and property damage	I C 2	Ensure airport representative has taken all necessary measures to close airport. Use ground guides when loading or unloading aircraft. All personnel will follow the directions of the load master. No munitions will be loaded or unloaded during refueling operations.	II E 4
5. Airport emergency procedures	Natural disasters, accident, incident, and inclement weather	Personnel and property damage	I C 2	Red Creek Airport emergency and evacuation plan will be implemented while on site team leader will be responsible for the accountability of Red Creek personnel while at Red Creek Airport. All operations will stop until the matter is resolved.	II E 4



**Table J-1**  
**Hazard analysis—Continued**

6. Night airport operations	Natural disasters, accident, incident, and inclement weather	Personnel and property damage	I C 2	The uses light set when loading or unloading aircraft, additional ground guides, reduce speed and ground guides will use flashlights when giving verbal or hand arm signals.	II E 4
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*d.* Reassess hazards in terms of exposure to risk. Qualitatively evaluate the risk of hazard or exposure, which must be in terms of probability and likely severity (see AR 385–10). Consider all possible conditions and events to determine whether any could cause or contribute to an accident or injury. The hazard analysis working group (HAWG) will address decisions regarding resolution of identified hazards. Develop and assign the risk assessment code (RAC), per AR 385–10, to each hazard.

*e.* The installation commander will develop the local HA. Personnel preparing HA will receive formal training and certification in HA preparation. The Defense Ammunition Center and the U. S. Army Combat Readiness Center offer courses in risk management, HA, and system safety. Those personnel instructing on or performing in HA should attend this type of training. Per DA Pam 385–64, the installation's or activity's certification authority must evaluate training, if other than outlined in paragraphs J-1a through J-1d, to ensure that personnel are qualified to conduct HA. Until training is completed, supervisors must ensure that only the most qualified personnel available perform, review, or approve HA for AOs. A CP12 L-1 CESP will approve each HA related to explosive operations.

*f.* Regarding hazard identification and control, the HA will identify each step of the operation in sequence. Proposed hazard controls will be evaluated for effectiveness to either eliminate the hazard or reduce the severity to an acceptable level of risk (normally RACs 4 or 5). The RACs developed for the HA will identify and categorize the risk, both before and after controls have been applied. RACs will be assigned per DA Pam 385–30. RACs 1 and 2 designations are unacceptable from an operational standpoint and will be reduced as much as possible, preferably to RAC 4, prior to starting operations. RAC 3 is permitted but should be discussed with and accepted by the commander. RAC 1 or 2 situations must be reduced to at least RAC 3 through realistic process modification or controls or abandon the task.

## **J-2. Hazard analysis process**

*a.* The organization that develops an SOP must first prepare a preliminary HA. A fairly complete list of areas to consider is in MIL-STD-882E. The most common format for this analysis is the columnar approach. This format consists of several columns describing the hazard, its cause, the resulting effects, the category of the hazard (previous RAC), a description of the measures taken to control the hazard, and a final RAC for the hazard as controlled.

*b.* Form an HAWG at each installation to support and manage the final HA-development process. Membership of the HAWG will consist of a safety chairperson, an SOP developer, and ammunition surveillance specialist, an environmental specialist, and others deemed necessary to provide adequate technical support. For toxic chemical operations, the HAWG will include at least one employee with experience and knowledge specific to the operation (an employee representative) and personnel with expertise in occupational and industrial hygiene. Document this employee participation in the HAWG.

*c.* Submit the preliminary HA to the HAWG for review. The HAWG will evaluate and determine the adequacy and suitability of the contents and will make necessary changes to constitute the final HA. Depending upon the operational risks involved, the HAWG may require additional analysis (data searches, testing prototyping, and so forth).

*d.* Based upon the complexity of the operation, the HAWG may deem additional HA techniques appropriate. They will be based upon the operating and support HA techniques given in MIL-STD-882E. The HAWG will assure that ancillary functions and conditions (that is, equipment maintenance, environmental considerations, and equipment failure modes) are considered prior to approving the HA.

*e.* When the HAWG approves the HA, it may then be used to develop the SOP it supports.

*f.* Review and update the HA, as necessary, prior to changing the SOP. The HA will also be reviewed in conjunction with any SOP review or recertification. The HA for toxic chemical operations will be reviewed during the annual SOP review.

## Appendix K

### Format and Example for Internal Standard Operating Procedure

Figure K-1 is a sample illustrated format for an internal SOP.

<b>Part I</b>		
1. <b>WORK INSTRUCTION NO:</b> WI-NE-RC-001 [use table K-1 for list of Written Standard abbreviations]		
2. <b>LOCATION:</b> [insert name of installation]		
3. <b>NONEXPLOSIVE OPERATION:</b> [type operation being performed]		
4. <b>PREPARED BY:</b> [first, last name]	<b>DATE:</b> [ddmmyyyy]	
5. <b>TITLE:</b> [Position title]	<b>DSN/COM:</b> 555-2461/319-565-2461	
6. <b>REVIEWED BY:</b> [first, last name]	<b>TITLE:</b> <u>CHIEF, MAINTENANCE BRANCH</u>	
7. <b>SUBMITTED BY:</b> [first, last name]	<b>TITLE:</b> <u>CHIEF, PLANNING BRANCH</u>	
8. <b>CONCURRENCES:</b>		
<u>OFFICE</u>	<u>TITLE</u>	<u>SIGNATURE/DATE</u>
AMMUNITION OPERATION	[first, last name]	DIRECTOR, AMMO OPERATIONS
SURVEILLANCE DIVISION	[first, last name]	CHIEF, AMMO SURV DIVISION
SAFETY	[first, last name]	CHIEF, SAFETY OFFICE
9. <b>APPROVAL</b>		
<b>NAME:</b>	[first, last name]	
<b>DATE:</b>	[ddmmyyyy]	
<b>SIGNATURE:</b>	[Senior Leader]	
10. <b>BIENNIAL REVIEW</b>		
<b>DATE</b>	<b>SIGNATURE</b>	<b>TITLE</b>
[ddmmyyyy]	[sign here]	[Position Title] (ORIGINATOR)
[ddmmyyyy]	[sign here]	<u>CHIEF, AMMUNITION SURVEILLANCE DIVISION</u>
[ddmmyyyy]	[sign here]	<u>DIRECTOR, AMMUNITION OPERATIONS</u>
[ddmmyyyy]	[sign here]	<u>CHIEF, SAFETY OFFICE</u>

Figure K-1. Internal standard operating procedure format

**APPROVAL [sign here] DATE [ddmmyyyy]**

**PART II**

1. Table of Contents:
2. Index of Operations: [if more than five steps]

**Part III**

1. General Safety Requirements:

- a. Wear gloves
- b. beware of snakes, insects, and rodents
- c. Wear sunblock during long periods outside
- d. Monitor for severe weather.

2. Specific Safety Requirements:

- a. Drivers will watch for uneven surface at the empty container pad and maintain slow speeds when traversing unpaved roads and pads.
- b. Lids on CNU containers require two-man lift. Beware of windy days when strong gusts can make removing lids outdoors very dangerous.

**Part IV**

**Operational Steps:**

<u>STEP</u>	<u>DESCRIPTION</u>	<u>INSTRUCTION</u>
1.	Position containers on pad to allow certifier access to check interior of containers	
2.	Remove Lids, if not already complete.	2. Use caution when lifting lids on windy days.
3.	Certifier inspect containers for presence of explosive assets. NOTE: if any live munitions are found, immediately halt all operations. Live assets will be handled IAW SOP RC-0000-T-01, Amnesty Ammunition Processing.	
4.	Verifier, confirm results of Certifier inspection	
5.	Palletize empty containers and lids.	5. Confirm with DRMO representative on required configuration of container and lids.
6.	Load palletized containers on truck.	

**Figure K-1. Internal standard operating procedure format—continued**

## Appendix L

### Format and Example Desk Procedure

A sample DP is shown in table L–1.

**Table L–1**  
**Desk procedure**

Desk Procedure XXXX–01	
SUBJECT: Title of Desk Procedure	Date: DD Mon YY
APPROVED FOR RELEASE:	DIRECTOR'S NAME Director's Title
Overview: Why was this operating procedure developed? Example: This procedure was developed to ensure requirements for maintaining controlled documents are captured within the Quality Directorate.	
Procedures:	
Second level heading. First major step in procedure.	
Second level heading. Second major step in procedure.	
Third level heading. Substep in procedure. Remember that if a procedure is broken into substeps, there must be at least two.	
Third level heading.	
Fourth level heading. This is the last level of subparagraph allowed.	
Fourth level heading.	
Fourth level heading. If you go all the way through the alphabet to z and need to continue, do so with aa, bb, and so on.	
Second level heading. Third major step in procedure.	
Second level heading. Fourth major step in procedure. If you go all the way through the alphabet to z and need to continue, do so with aa, bb, and so on.	
References: List in the order they appear in the document. At a minimum, a desk procedure will always reference the operating procedure that it supports.	
Appendices / Attachments: List in the order they appear in the document.	
Overview: Why was this operating procedure developed? Example: This procedure was developed to ensure requirements for maintaining controlled documents are captured within the Quality Directorate.	

## Appendix M

### Internal Control Evaluation

#### M–1. Function

The function covered by this evaluation is the administration of the managers' internal control program.

#### M–2. Purpose

The purpose of this internal control evaluation is to assist commanders in evaluating the key internal controls listed. It is intended as a guide and does not cover all controls.

#### M–3. Instructions

Answers must be based on the actual testing of key internal controls (for example, document analysis, direct observation, sampling, and simulation). Answers that indicate deficiencies must be explained and the corrective action identified in supporting documentation. These internal controls must be evaluated at least once every 5 years. Certification that this evaluation has been conducted must be accomplished on DA Form 11–2 (Internal Control Evaluation Certification).

#### M–4. Test questions

- a.* Has the responsible organization established policies and procedures to execute its responsibilities and is the organization in compliance with its policies and procedures?
- b.* Has a written installation ammunition support program with policy and procedures been developed to include an explosive safety management plan and amnesty ammunition?
- c.* Is an installation ammunition facility manager designated, in writing, to exercise staff supervision over the installation ammunition support program?
- d.* Does the designated installation ammunition facility manager have direct access to the commander or director?
- e.* Do installation ammunition facility managers, safety councils, training boards and committees meet as required?
- f.* Are strategic goals, objectives, and planning executed and has a business plan been developed to implement them?
- g.* Are formal agreements developed with tenant organizations, as necessary?
- h.* Do command-integrating agents develop and implement plans and programs to integrate risk management into their functional area of responsibility?
- i.* Are both quantitative and qualitative metrics developed and used to measure their installation ammunition facility manager program effectiveness?
- j.* Do command installation ammunition facility managers meet Office of Personnel Management standards for the position of installation ammunition facility manager?
- k.* Does the command request, obtain, and designate sufficient funds and other resources to carry out all responsibilities designated in this regulation?
- l.* Do all installation ammunition facility managers conduct and document annual programmatic audits of their safety program execution using their performance indicators and matrices?
- m.* Does each level of command audit each of their subordinate organizations' safety program execution using their performance indicators and matrices at least once every 3 years?
- n.* Are procedures in place and in operation to determine if facilities and equipment meet or exceed safety and health standards established in pertinent host government, Federal, State, and local statutes and regulations and in Army regulations?
- o.* Are all deficiencies tracked and abated?
- p.* Have practices and procedures been developed that minimize accident risk incorporated into regulations, directives, SOPs, special orders, training plans, operations plans, and SOPs developed for all operations?
- q.* Do all commanders, supervisors, and ammunition staff receive specialized training to enable them to properly execute their ammunition leadership and staff responsibilities?
- r.* Are specific plans developed to ensure continuity of safety occupational health and the risk management process during tactical operations or mobilization?
- s.* Has a program or policy developed for reporting unsafe or unhealthful conditions?
- t.* Are standard Army ammunition facility inspections conducted to evaluate the status of the installation ammunition facility and risk management integration?
- u.* Are all accidents reported within required timelines?

v. Is risk acceptance for explosives safety deviations exceeding 1 year reviewed annually with documentation of the review provided to the appropriate headquarters safety office?

w. Are all practices and procedures in security regulations, directives, SOPs, special orders, training plans, operations plans, and SOPs developed for all operations in all ammunition areas incorporated and complied with?

**M-5. Supersession**

Not applicable.

**M-6. Comments**

Help make this a better tool for evaluating internal controls. Submit comments to the Deputy Chief of Staff, G-4 (DALO-SPM), 500 Army Pentagon, Washington, DC 20310-0500.

## **Glossary**

### **Section I**

#### **Abbreviations**

**AMC–R**

Army Materiel Command regulation

**AO**

ammunition operation

**APE**

ammunition peculiar equipment

**AR**

Army regulation

**CFR**

Code of Federal Regulations

**CP12**

career program 12

**DA Pam**

Department of the Army pamphlet

**DMWR**

depot maintenance work requirements

**DoD**

Department of Defense

**DoDI**

Department of Defense instruction

**DoDIC**

Department of Defense identification code

**DP**

desk procedure

**HA**

hazard analysis

**HAWG**

hazard analysis working group

**L–1 CESP**

Level 1 Certified Explosive Safety Professional

**LOI**

letter of instruction

**MIL–STD**

military standard

**QA**

quality assurance

**QASAS**

quality assurance specialist (ammunition surveillance)

**RAC**

risk assessment code

**RDT&E**

research, development, test, and evaluation

**SOP**

standard operating procedure

**USC**

U.S. Code

**WS**

written standard

**Section II****Terms****Ammunition**

A type of munition normally containing explosives, initiating composition, propellant, pyrotechnics, or chemical material designed to inflict damage on personnel, material, military objectives, or structures. Ammunition includes bombs, cartridges, detonators, fuses, grenades, mines, projectiles (such as bullets), propellants, and pyrotechnics, as well as shot and its primers.

**Ammunition and explosives**

Includes, but is not necessarily limited to, all items of U.S. title (for example, owned by the U.S. Government through the DoD components) 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. Excluded are wholly inert items and nuclear warheads and devices, except for considerations of storage and stowage compatibility, blast, fire, and nonnuclear fragment hazards associated with the explosives.

**Ammunition mission**

Any installation or activity that tests, demilitarizes, stores, ships, or handles ammunition or explosives.

**Bay**

A location (for example, room, cubicle, cell, or work area) that affords the level of safety and protection appropriate to the material and activity involved.

**Certification**

Ensures that personnel working with live explosives or ammunition have the required training or background to work with these items safely and to recognize explosively hazardous situations.

**Certification authority**

The installation or activity commander—alternately, an individual or a board appointed in writing by the commander or the installation or activity—who ensures that the provisions and intent of this pamphlet are implemented at the local level. The individuals appointed should be technically qualified to understand the general hazards of ammunition, explosives, explosive components, guided missiles, and toxic chemical operations. At Government-owned, contractor-operated installations, the individuals appointed may be contractor personnel. An observer or monitor from the Government staff may be appointed.

**Certification board**

An established board comprised (at a minimum) of directors or chiefs of organizations performing ammunition or energetic operations, a civilian personnel representative, the safety director or manager, the senior QASAS, a military representative (officer or warrant officer for evaluation of military personnel), and a contracting office representative (for contractor employees) versed in existing agreements with union representatives. However, the board is not limited to these individuals and may be expanded based upon the certifying official's decision. Nominate board members based on their experience and training in either explosives operations (for operations personnel) or their support specialties. A board may be established at the installation or tenant unit or activity level, no lower.

**Certifying official**

Installation or activity commander, deputy commander, or the commander's designated representative who will not be a board member. This individual has the final decision as to whether an individual is certified or certification is revoked, based upon the recommendation of the certification board; any variation from the recommendation should be documented.



**Component**

Any part of a complete item whether loaded with explosives (commonly called “live”), not containing explosives, or empty.

**Contractor**

A non-Federal individual, firm, corporation, partnership, association, or other legal, non-Federal entity that enters into a contract directly with the DoD to furnish services, supplies, or construction.

**Contractor-owned, contractor-operated**

A manufacturing facility owned and operated by a private contractor performing a service under contract for the Government.

**Department of the Army personnel**

Civilians—including Senior Executive Service, general manager, general schedule and wage grade employees (including National Guard and Army Reserve technicians), nonappropriated-fund employees, youth or student assistance program employees, and foreign nationals—directly employed by DoD components.

**Depot maintenance work requirements**

A maintenance serviceability standard for depot-level repairable equipment designated for repair and return to Army working capital fund stock. It prescribes: (1) the scope of work to be performed on an item by organic depot maintenance facilities or contractors or qualified below-depot sources of repair, (2) types and kinds of materials to be used, and (3) quality of workmanship. It also addresses repair methods, procedures and techniques, modification requirements, fits and tolerances, equipment performance parameters to be achieved, QA discipline, and other essential factors to ensure that an acceptable and cost-effective product is obtained.

**Deviation**

A variance that authorizes departure from a particular safety requirement that does not strictly apply or where the intent of the requirement is being met through alternate means that provide an equivalent level of safety.

**Disposal**

End-of-life tasks or actions for residual materials resulting from demilitarization or disposition operations.

**Dud**

Explosive munition that has not been armed as intended or that has failed to function after being armed.

**Exemption**

A written authorization granted by the proper Army authority for strategic or other compelling reasons that permits a long-term deviation from mandatory Army safety requirements.

**Explosive**

An item of ammunition; a propellant, liquid or solid; a high- and low-yield explosive; a pyrotechnic; or a substance associated with the foregoing that present real and potential hazards to life or property. It includes any device or assembly of devices that contain an explosive material. Examples are bombs, guided or unguided; water and land mines; depth charges; nonnuclear warheads; explosive-loaded projectiles; explosive components of aircrew escape systems; missile propellants; unguided missiles; pyrotechnic illuminating and signaling devices; and cartridge-actuated tools, such as stud drivers.

**Government-owned, contractor-operated**

A manufacturing plant that is owned by the Government and operated by a civilian organization under contract to the Government.

**Government-owned, Government-operated**

A manufacturing plant that is both owned and operated by the Government.

**Hazard**

Any actual or potential condition or activity that can cause injury, illness, or death of personnel; damage to or loss of equipment or property; or mission degradation.

**Hazard analysis**

A clear, systemic, concise, well-defined, orderly, consistent, closed-loop, quantitative, qualitative, and objective methodology used to identify possible hazards within a mission, system, equipment, or process that can cause losses to the

mission, equipment, process, personnel, or damage to the environment. Examples of HAs are what-if scenarios, preliminary HAs, sneak-circuit analyses, hazard and operability studies, fault-tree analyses, failure-mode and effects analyses, and fault HAs.

**Hazardous material**

Any material that has been designated as hazardous under 49 USC 5101 through 49 USC 5127 and is required to be placarded under 49 CFR 172 or any quantity of material listed as a select agent or toxin in 42 CFR 73. It includes substances with hazardous characteristics, such as flammable, corrosive, reactive, toxic, radioactive, poisonous, carcinogenic or infectious, and having properties capable of producing adverse effects on the health and safety or the environment of a human being. Find legal definitions in individual regulations. It also includes any substance or material that, when involved in an accident and released in sufficient quantities, poses a risk to people's health, safety, or property, such as explosives, radioactive materials, flammable liquids or solids, combustible liquids or solids, poisons, oxidizers, toxins, and corrosive materials. The Department of Transportation uses the phrase to cover eight hazard classes, some of which have subcategories called classifications and a ninth class covering other regulated materials; the Department includes in its regulations hazardous substances and hazardous wastes as other regulated materials-E, both of which are regulated by the Environmental Protection Agency, if their inherent properties would not otherwise be covered.

**Incident**

An unplanned event that interrupts the completion of an activity or causes injury, property or vehicle damage, or a near-miss. It is sometimes referred to as an "accident."

**Individual risk**

A risk to a single exposed person.

**Inert**

Contains no explosives, active chemicals, or pyrotechnics, but is not necessarily noncombustible.

**Inherent hazard**

An existing or permanent hazard (such as voltage).

**Injury**

A traumatic wound or other condition of the body caused by external force, including stress or strain. The injury is identifiable as to time and place of occurrence and member or function of the body affected and is caused by a specific event, incident, or series of events or incidents within a single day or work shift.

**Inspection**

A comprehensive survey of all or part of a workplace to detect safety and health hazards. Inspections are normally performed during the regular agency work hours, except as special circumstances may require. Inspections do not include routine, day-to-day visits by agency occupational safety and health personnel or routine workplace surveillance (29 CFR). They are the means of determining compliance with safety and health standards through formal and informal surveys of workplaces, operations, and facilities.

**Interim certification**

A certification designed to bridge the gap after an employee has been assigned to a covered position but prior to certification as required by this regulation. This certification expires after 12 months and may be renewed only once.

**Magazine**

A structure designed or specifically designated for the storage of explosives.

**Military munitions**

All ammunition products and components produced or used by the Armed Forces for national defense and security, including ammunition products or components under the control of the DoD, the Coast Guard, the Department of Energy, and the National Guard. The phrase includes confined gaseous, liquid, and solid propellants; explosives; pyrotechnics; chemical and riot control agents; and smokes and incendiaries used by the DoD components. Also included are 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 phrase does not include wholly inert items, improvised explosive devices and nuclear weapons, nuclear devices and nuclear components; however, the phrase does include 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) have been completed (10 USC 101(e)(4)).

**Military personnel**

All military personnel on active duty, Army Reserve or National Guard personnel on active duty or on drill status, Service academy midshipmen or cadets, Reserve Officer Training Corps cadets (when engaged in directed training activities), and foreign national military personnel assigned to DoD components.

**Occupational Safety and Health Act**

The primary Federal law, which governs occupational health and safety in both the private sector and Federal Government in the United States. Its main goal is to ensure that employers provide employees with an environment free from recognized hazards.

**Operator**

A person assigned to perform a specific, generally continuing function on a production, maintenance, renovation, or disposal line or operation. Typically, the functions are performed at workstations or areas defined in an SOP.

**Recognized hazards**

A hazard is recognized if it is commonly known in the employer's industry, if there is evidence that the employer knew or should have known of the existence of the hazard, or if it can be established that any reasonable person would have recognized the hazard.

**Risk**

The probability or frequency that an accident will occur within a certain time and the accident's consequences to people, property, or the environment.

**Risk assessment**

A method to determine and document hazards, which may be present, and controls to mitigate or eliminate those hazards.

**Safety**

Freedom from those conditions that can cause death, injury, occupational illness, or damage to or loss of equipment or property.

**Toxic chemical**

A substance that is intended for military use with lethal or incapacitating effects upon personnel through its chemical properties.

**Waiver**

A written authorization granted by the proper Army authority for strategic or other compelling reason that permits a temporary deviation from mandatory Army safety requirements.

**Workplace**

A place (whether or not within or forming part of a building, structure, or vehicle) where any person is to work, is working, for the time being works or customarily works for gain or reward. In relation to an employee, it includes a place or part of a place under the control of the employer (not being domestic accommodation provided for the employee).



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