
APPENDIX A
HISTORICAL STANDARD OPERATING
PROCEDURES

RCRA PART B PERMIT APPLICATION

FOR

OPEN BURNING/OPEN DETONATION

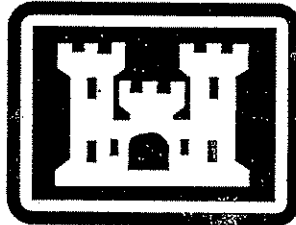
AT

**FORT WINGATE DEPOT ACTIVITY
GALLUP, NEW MEXICO**

VOLUME II

PREPARED FOR

**U.S. ARMY CORPS OF ENGINEERS
HUNTSVILLE, ALABAMA**



PREPARED BY:

**ENGINEERING, DESIGN AND GEOSCIENCES GROUP, INC.
NASHVILLE, TENNESSEE**

IN COOPERATION WITH
**ENVIRONMENTAL AND SAFETY DESIGNS, INC.
MEMPHIS, TENNESSEE**

NOVEMBER, 1988

APPENDIX V

STANDING OPERATING PROCEDURES

**SOP COVER SHEET
FORT WINGATE DEPOT ACTIVITY
STANDING OPERATING PROCEDURE FOR:**

2. ITEM Detonation of High Explosive
Loaded Ammunition Items and
Certain Pyrotechnics; various FSCs
and DODICs; various Hazard
Class and Fire Symbols

3a. OPERATION Demilitarization (Non-Electric)
Detonation

3b. ESTIMATED DAILY PRODUCTION RATE As directed by

4. Commodity being handled
 DEPOT ORGANIZATION SYMBOL: SDSTE-FWM

5. EW-0000-G-003
 SOP No. _____ DATE: 16 Aug 72

5a. REV No. 2 DATE: 27 Feb 87

5b. CHANGE No. _____ DATE: _____

6. AUTHORITY Applicable DMWR's, TM's, etc.
(See References)

7. PREPARED BY Dorothy J. Fijalkowski
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8. REVIEWED BY: Rudolfo Ortiz

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10. CONCURRENCES: Dorothy J Fijalkowski

TITLE Distribution Facilities Specialist

PHONE EXTENSION: X350

TITLE Explosives Operator Foreman

TITLE Distribution Facilities Specialist

OFFICE	SIGNATURE	TITLE
<u>Program Manager</u>	<u>Adrian R. Bond</u>	<u>Environmental Coordinator</u>
<u>Ammo Mission Div.</u>	<u>Alfred Pino</u>	<u>Chief, Ammo Mission Div.</u>
<u>Surveillance Div.</u>	<u>Gaylon Ray</u>	<u>Chief, Surveillance</u>
<u>Support Div</u>	<u>Henry George</u>	<u>Chief, Support</u>
<u>Safety Branch</u>	<u>Lt. Huntley</u>	<u>Safety Officer</u>

11. APPROVAL Nelson A. Miller
 NELSON A. MILLER
 Major, OrdC, Commanding

12. BIENNIAL REVIEW:

DATE	SIGNATURE	TITLE

SOP No. EW-0000-G-003 DATE 16 Aug 72
 REV No. 2 DATE 27 Feb 87
 CHANGE No. _____ DATE _____

INDEX OF OPERATIONS

OPER No.	BLDG No. OR SITE	BAY No.	TOTAL EXPL. ALLOWED IN BAY (Ref. Col 3)	DESCRIPTION OF OPERATION	PAGE No.
1	Demo Ground		10,000# Mx. over 5,000# Earth Cover Reqd.	Receive items for detonation, unload and Unpack	15
2	"		" " "	Prepare explosives and ammunition for Detonation	17
3	"		" " "	Prepare and initiate non-electric firing system	20
4	"		" " "	Misfire Procedures	24

REMARKS:

- Revision 1 updates current SOP per AMC-R 385-1, dated 22 Feb 82, and removed electric detonation procedures.
- Change 1 incorporates USADACS comments and recommendations.
- Revision 2 updates SOP IAW AMC-R 700-107, dated 29 Aug 86, and adds environmental requirements.
- Demolition Area: A site selected and approved for the disposal by detonation of ammunition, explosives and ammunition components. This site is located approximately five miles south of the Administration Area and 3,890 feet from the nearest magazine. Operational approach is through Gate 209.

SDSTE Form 1298C REV 7 Jul 82
 (Replaces previous edition of 30 Jul 79 which is obsolete)

5. References:

- a. AMC R 385-100
- b. AMC-R 700-107
- c. TM 743-200-1
- d. TM 9-1300-206
- e. DOD 4160-21-M-1
- f. AR 380-5
- g. TM 9-1375-213-12
- h. DMWR 9-1320-0000-X1
- i. DMWR 9-1325-0000-X2
- j. DMWR 9-1300-0000-X4
- k. DMWR 9-1300-0002-X1
- l. DMWR 9-1315-0000-X3
- m. DMWR 9-1340-H600-F1
- n. SOP FW-0000-L-002
- o. FM 5-25
- p. AMC-R 755-8
- q. AMC-R 350-4
- r. EXEMPTION NO. FWDA-E-1-87

GENERAL SAFETY REQUIREMENTS

A. RESPONSIBILITIES:

1. The responsibility for the operation, maintenance and security of the ammunition and explosives demolition area rests with the Commanding Officer and his delegated representatives as follows: Chief, Ammunition Mission Division and Explosives Operator Foreman, who will exercise complete jurisdiction over all activities scheduled for accomplishment within the area.

2. Only the Commanding Officer, Ammunition Inspector, Chief, Q.A. Div and the Explosives Operator Foreman will be permitted to enter the demolition area without first obtaining clearances from the Chief, Ammunition Mission Division, but only if it is positively known that it is safe to enter. Fire prevention personnel, security guards and medical personnel may enter only when on emergency duty or at the discretion of the Commanding Officer; under all other circumstances, permission to enter this area will be obtained.

B. PERSONNEL SAFETY REQUIREMENTS:

1. Standard Operating Procedure (SOP) applicable portion, shall be conspicuously posted. Supervisory personnel shall maintain copies of complete SOP and be responsible for the enforcement of its provisions.

2. There will be no deviation or change from the approved SOP without prior approval of the installation Commander or his designated representative.

3. Employees will not tamper with any safety devices or protective equipment.

4. Any defect or unusual condition noted that is not covered in this SOP will be reported immediately to supervisory/QASAS personnel.

5. Appropriate fire symbol and/or chemical hazard symbol shall be displayed in such a manner as to be easily visible from all roads of approach.

6. Care will be taken to limit exposure of a minimum number of personnel, for a minimum time, to a minimum amount of hazardous material consistent with safe and efficient operations.

7. Personnel will be so located that operators will have an unobstructed path of travel to the nearest available exits.

8. Work locations will be maintained in a neat and orderly condition.

9. All handtools shall be maintained in a good state of repair.

a. Supervisor will perform daily inspection of hand tools and mechanical devices to insure that they have not become unsafe for use as designated either to the item being worked or to the operator.

b. Tools used in operations with exposed explosives will be of non-sparking materials.

10. Personnel in proximity to steel banding operations will wear face shields and safety eyewear. Operators handling metal banding will also wear leather or leather-palmed gloves.

11. Operators lifting material will use proper, safe hand holds, assume proper lifting position, avoid twisting when lifting or carrying, and avoid sharp objects.

12. Leather or leather-palmed gloves will be worn when handling wooden boxes.

13. Operators engaged in demolition activities will wear flame retardant coveralls and cotton undergarments.

GENERAL SAFETY REQUIREMENTS (Con't)

B. PERSONNEL SAFETY REQUIREMENTS (Con't)

14. Steel-toed safety shoes will be worn by all personnel engaged in material handling operations.

15. Employees will remove protective clothing and change into street clothing, including shoes, prior to entering administrative area. Bldg. 528 will serve as the change area.

16. Explosives-loaded ammunition, packaged ammunition or bulk explosive shall not be handled roughly, thrown about, tumbled, dropped, or walked over other explosives or ammunition. Large ammunition items packaged in DOT approved containers designed to permit dragging, rolling or towing, may be so moved when necessary during handling.

17. Motor vehicles used to transport explosives, ammunition or other material to the destruction site shall meet the requirements of AMC-R 385-100, Chapter 22.

18. Forklift trucks will not be used handling ammunition items when fuzed unless the item is packed in an approved manner for safe shipment, complying with AMCCOM and DOT regulations.

19. Each MHE and/or vehicle operator will have in his possession a valid operator's permit for the particular piece of equipment to be operated.

20. Material Handling Equipment and other lifting devices will have the load rating and date of next inspection marked on them. The load rating will not be exceeded and the equipment will not be used without a current inspection date.

21. The supervisor will prevent, wherever possible, accumulation of excess material or excess personnel. Any accumulated excess material will be removed immediately. Likewise, personnel in excess of posted limits will be requested to leave.

22. Roller conveyors shall be used where practical.

a. Supports, such as horse-type, should be sufficiently substantial to give solid support under operating condition.

b. Boxes should not be used as supports unless they are safe from overturning and are securely tied together when more than one is used.

c. Containers of hazardous materials shall not be used as conveyor supports.

d. Loaded ammunition items should not be left on conveyors during non-operating periods.

e. Employees will not walk or stand on conveyors at any time.

23. Matches, lighters, or other spark-producing devices are forbidden in the Ammunition and Demolition areas, except where written authority has been granted by the Commanding Officer or his designated representative.

24. In the event of an electrical storm, all demolition activities will be stopped and all personnel will be evacuated from the area. When approved shelters are not available, personnel will be withdrawn to places at inhabited building distances from the hazardous location. Ref: Surveillance Policy Memo 86-32.

GENERAL SAFETY REQUIREMENTS (Con't)

B. PERSONNEL SAFETY REQUIREMENTS (Con't)

25. When threatened by fire or explosion, a location containing explosive hazardous material will be evacuated immediately.

26. Two fire extinguishers (dry chemical) in good working order will be maintained at all operating lines where work is performed, and be readily accessible for instant use.

27. Operations will cease immediately in case of accident or serious injury. Notify Dispensary, Chief, Ammunition Mission Division, Quality Assurance Division and Safety Officer immediately by telephone, car radio or messenger. Relate the type of injury, seriousness, and exact location of injured personnel. Supervisor will be responsible for the initiation of all accident and injury reports.

28. All employees handling or storing material treated with Pentachlorophenol (PENTA) should be aware of the following guidance:

a. The degree of hazard associated with PENTA treated packing materials cannot be determined by visual examination. There are no quantifiable criteria to use in judging such items as "loose" or "excessive", therefore, the following information is disseminated to provide final guidance on protective measures for handling PENTA treated wood. This guidance should be followed under the direction of a resident industrial hygienist who has evaluated the actual PENTA exposure in question.

b. The following protective measures are recommended for handling PENTA-treated lumber:

(1) Prevent inhalation, ingestion, skin and eye contact.

(2) Good housekeeping is essential to prevent reentrainment of PENTA crystals or wood dust.

(3) Prevention of skin and eye contact through the use of gloves, coveralls, and goggles. The type of gloves to be worn is dependent upon the characteristics of the wood being handled. If the wood is wet or tacky, gloves made of nitrile rubber or polyvinyl chloride (PVC) should be worn. Leather-palmed gloves offer proper skin protection when handling properly treated wood. Perspiration build-up may allow PENTA to permeate through leather gloves; therefore, only dry leather-palmed gloves should be worn, coveralls which are laundered on a routine basis (preferably daily) should be worn. The coveralls should not be taken home but should remain at the work site. When handling wood with visible crystals of PENTA or when generating wood dust, chemical goggles should be worn.

(4) A National Institute for Occupational Safety and Health (NIOSH)-approved dust mask must be worn when sawing and machining treated wood. If the airborne PENTA concentration exceeds, or is expected to exceed, the threshold limit value (TLV) of 0.5 MG/M3 timeweighted average, a NIOSH-approved organic vapor respirator with dust prefilter must be worn.

(5) No smoking, eating, or drinking should be permitted in the work areas. Separate break areas and washing facilities should be provided. Personnel should wash hands prior to eating, drinking, smoking, or using toilet facilities. All exposed areas of the body should be washed at the end of each workday.

c. Guidance on handling lumber treated with zinc naphthenate and copper naphthenate-prevent inhalation, ingestion, and skin contact.

(1) Good housekeeping - see b(2).

(2) Personnel should wash hands before eating, drinking, smoking, and using toilet facilities. All exposed areas of the body should be washed at the end of each workday.

GENERAL SAFETY REQUIREMENTS (Con't)

B. PERSONNEL SAFETY REQUIREMENTS (Con't)

(3) Leather-palmed gloves should offer proper skin protection. If skin irritation is noted, a vinyl-coated glove can then be substituted. Coveralls may be required if irritation is noted for other areas of the body.

(4) A NIOSH-approved dust mask should be worn when sawing and machining treated wood.

d. The U.S. Army Environmental Hygiene Agency provides the following sampling guidance for monitoring personnel exposed to PENTA; however, supporting laboratories should be contacted to verify their particular sampling protocol:

			SAMPLE RATE OR TIME MIN	SAMPLE VOL IN LITERS MAX
(1)	Carried by sawdust	Filter cassette closed-faced w/ spacer (or 0.8 micron)	1-2 Liters/ minute	50 500
(2)	Vapor	Midget Impinger (15ML of ethylene Glycol)	1.5 Liters/ minute	100 240

e. If the level of 0.5 MG/M3 time weighted is exceeded, adequate precautions must be taken to reduce worker exposure to a safe level.

C. DESTRUCTION REQUIREMENTS:

1. General Requirements for Destruction of Explosive Materials

a. Explosives and ammunition which are dangerously deteriorated or cannot be definitely identified shall be destroyed by an approved method. Destruction shall not be undertaken without prior approval of the Commander, AMC, ATTN: AMCSF, unless the Commanding Officer decides that immediate destruction of deteriorated explosives or ammunition is necessary for the protection of life and property. When destruction is authorized, the provisions of all current Army directives involving lost, destroyed, damaged or unserviceable property must be observed. Prior approval for destruction of routine waste is not required. Compliance with applicable Federal, State and local environmental restrictions and permits is mandatory. Review of all SOPs for explosives and ammunition by the installation Environmental Coordinator is mandatory.

2. Destruction Sites.

a. Site selection, physical security, personnel training, emergency equipment, and procedures shall be governed by applicable Federal, State and local environmental regulations, particularly, applicable hazardous waste regulations, and by the safety considerations as follows. Open detonation operations will be conducted in accordance with applicable air, hazardous waste, and other environmental permits. The site selected for the destruction of explosives and ammunition shall be located at the maximum practicable distance from all magazines, inhabited buildings, public traffic routes, and operating buildings; but not less than 2,400 feet unless pits or similar aids are used to limit the range of fragments or debris. When trials prove that fragments and debris are limited to lesser ranges, the appropriate inhabited building distances may be used. Sites must also be located in relation to the direction of prevailing winds, so that sparks will not be blown towards explosives locations. Where possible, natural barricades shall be used between the site and operating buildings or magazines.

GENERAL SAFETY REQUIREMENTS (Con't)

C. DESTRUCTION REQUIREMENTS (Con't)

b. In order to select proper quantity to be detonated at one time, a test shot limited to not more than 1,000 lbs of explosives will be fired. If the explosive content of a single item exceeds 1,000 lbs, only one item will be test fired. If the initial test is satisfactory, progressive increases in the demolition charge may be accomplished until the maximum quantity of 10,000 lbs is reached. This procedure will be used for the destruction of all ammunition, ammunition components and explosives to be destroyed by detonation. When explosive content is more than 5,000 lbs, the set-up will be covered with a minimum of 10 feet of earth as recommended by the University of Utah. In all demolition activities, the quantity of explosive to be detonated will in no case exceed 10,000 lbs.

c. Dry grass, leaves and other combustible material in amounts sufficient to spread fire shall be removed within a radius of 200 feet from the point of destruction. The grounds should be of well packed earth and shall be free from large stones and deep cracks in which explosives might lodge. Explosive materials shall not be detonated on concrete mats.

d. Fire-fighting facilities shall be readily available to extinguish brush or grass fires. Brush or grass fires will be combatted only at the discretion of the Supervisor and Q.A. representative.

e. The demolition area shall be serviced with telephones and two-way radio communication.

3. Explosives Material Awaiting destruction.

a. Explosives material awaiting destruction shall be stored at not less than intraline distance, based on the largest quantity involved, from explosives being destroyed. The material shall be protected against accidental ignition or explosion from fragments, grass fires or detonating impulse originating in material being destroyed.

4. Personnel Protection.

a. Adequate personnel protection for personnel shall be provided in the form of face shields. Where circumstances warrant their use, complete personnel protection shall be provided. Such structures should preferably be located at the appropriate inhabited building distance for the quantity and type of materials being detonated but in no case will this distance be less than 300 feet. Employees must use such protection when explosive materials are destroyed by detonation.

b. During disposal and destruction operations, the number of people in the area exposed to the hazard must be kept to a minimum. Warning signs or roadblocks shall be posted to restrict the area and to ensure proper segregation of activities. The number of personnel engaged in the disposal and destruction operations shall be no fewer than two and operations shall be arranged so that not all of the personnel are exposed to an incident.

5. Supervision and Training.

a. The disposal area and its operations shall be ^{under} the direct control and supervision of an experienced and trained supervisor charged with the responsibility for all activities within the area. He shall be present during all detonation operations. During his absence, a competent certified person will be designated to be in charge. He shall also be charged personally with the sole custody of all ignition devices. Prior to actual detonation of explosives, all personnel including the demolition ground supervisor will be evacuated to a safe distance or to control tower to monitor the total operation until it is complete.

b. Personnel employed at the destruction area shall be thoroughly trained regarding the nature of the materials handled and the hazards involved. It is essential that thorough training and vigilant supervision be provided.

GENERAL SAFETY REQUIREMENTS (Con't)

C. DESTRUCTION REQUIREMENTS (Con't)

c. In the absence of specific regulations covering any phase of the destruction of explosive material, complete information will be forwarded through command channels to the Commander, AMC, ATTN: AMCSF, requesting instruction and guidance.

6. Servicing of Destruction Site.

a. Upon arriving at demolition ground, trucks may distribute explosive items to be destroyed at sites where destruction is to take place. Trucks shall have motors turned off, brakes set and wheels chocked while unloading. As soon as all items have been removed, trucks shall be withdrawn from the demolition area to a safe location until destruction is completed.

b. Containers of ammunition items to be destroyed shall be spotted and opened at least 10 feet from each other and from explosives material previously laid for destruction to prevent rapid transmission of fire in event of premature ignition.

c. Empty containers shall be closed and moved a sufficient distance away to prevent charring or damage during detonation. Empty containers may be picked up by truck on the return trip after delivery of the next quantity to be destroyed.

d. When materials being processed at destruction sites are to be handled by gasoline or diesel-powered fork lift, the requirements of AMC-R 385-100, Paragraph 24-2c will be observed. All such material handled will be properly packaged and must not be contaminated with explosives.

7. Material for Detonating Ammunition.

a. Detonation of explosives and/or ammunition will be initiated by nonelectric blasting caps only.

b. The explosives end of the nonelectric blasting cap shall always be pointed away from the body.

8. Detonation of Ammunition.

a. Ammunition or explosives to be destroyed by detonation should be detonated in a pit not less than four feet deep and covered with no less than two feet of earth. The components should be placed on their sides or in the position to expose the largest area to the influence of the initiating explosives with adequate number of demolition blocks placed in intimate contact on top of the item to be detonated and held in place by earth packed over the demolition blocks. Where space permits, and the demolition area is remotely located from inhabited buildings, boundaries, work areas, and storage areas, detonation of shells and explosives may be accomplished without the aid of a pit.

b. After each detonation a search shall be made of the surrounding area for unexploded material and items. Items or material such as lumps of explosives or unfuzed ammunition may be picked up and prepared for the next detonation. Fuzed ammunition or items which may have internally damaged components should be detonated in place unless the item can be safely handled by using mechanical retrievers providing protection to personnel.

D. LOCAL REQUIREMENTS:

1. Obtain weather information from Gallup Flight Service, including but not limited to temperature, visibility, wind velocity, temperature gradient and wind direction. Operations will be conducted during daylight hours and at wind speeds not less than 4 MPH and not exceeding 15 MPH. Wind direction will be carefully monitored to preclude dense clouds of smoke from exiting the depot boundary. Meteorological information will be logged and maintained as a permanent record.

GENERAL SAFETY REQUIREMENTS (Con't)

D. LOCAL REQUIREMENTS (Con't)

2. Notify Gallup Flight Service (722-4308), at least 12 hours in advance of scheduled detonations. Two hours prior to detonation, Gallup Flight Service will again be notified. Visual aircraft surveillance will be in effect prior to and during firing. This will be the responsibility of the Q.A. representative. Once the non-electric firing process has been initiated, no attempt will be made to stop it because of the presence of aircraft. Detonation will not be accomplished unless the ceiling is greater than 1000 feet and the visibility is greater than five miles.

3. Only personnel with proper security clearance will be utilized when destroying classified items.

4. Supervisor in charge of operation, with required security clearance, must be present during all phases of the operation when classified items are processed.

5. Fire symbol and placards will not be removed from vehicles until all explosives have been removed.

6. Area will be scanned and/or searched for livestock and personnel prior to initiation of charge.

E. DEMILITARIZATION REQUIREMENTS:

1. Accountability.

a. The Ammunition Transfer Record (DA Form 4508) will be used to move demil assets from the storage location to the demil grounds. This form will perpetuate the document number used to adjust the accountable records and will contain the certificate of destruction which is to be maintained a minimum of 2 years.

b. The Ammunition Transfer Record of Approval will be considered the demil work order. Accountability records will be maintained to include lot integrity, quantity, tonnage, and dollar value of items destroyed. The disposition of each asset generated will also be indicated. Complete records will be maintained by the office of record.

2. Ammunition Surveillance.

a. Operations involving the disposal of conventional ammunition and related packing components will be reviewed by QASAS personnel. On-site visits will verify compliance with safety and environmental requirements.

b. QASAS personnel will assure that returned packing material is properly certified as free of explosives or contamination.

c. QASAS personnel will assure adequacy of demil and decontamination processes performed of generated scrap material, including items requiring mutilation.

d. QASAS personnel will assure that functional classification and quality standards of components material generated from demil and scheduled for reuse or sale through DRMO are IAW appropriate DMWRs or LOIs.

GENERAL SAFETY REQUIREMENTS (Con't)

E. DEMILITARIZATION REQUIREMENTS (Con't)

e. The Quality Assurance Division will establish procedures to ensure prompt disposal of any material scheduled for demil which could otherwise become more hazardous if retained in storage. Q.A. will work closely with operating authorities and the Safety Office to assure priority is placed on the disposition of these items.

f. The Quality Assurance Division will document the results of all inspections identifying the date, time, supervisor in charge and any deficiencies noted. Deficiencies will be reported through formal channels.

3. Safety. Operations will be conducted IAW AMC-R 385-100 and the approved technical guidance.

4. Industrial Hygiene.

a. The IH should identify potential hazards, quantify actual exposures, become involved to reduce exposures, and advise personnel on the use of personnel protective devices.

b. The IH will incorporate detonation operations into the overall installation industrial hygiene program to include the occupational health hazards inventory. Health education will be provided to employees active in demil operations and who may become exposed to noise, heat, carbon monoxide, eye hazards and systemic poisoning.

5. General Environmental Requirements.

a. All Federal, State and local environmental regulations will be complied with in all demil operations.

b. All applicable DMWRs, LOIs, and other documentation must be reviewed by the environmental coordinator to ensure there are no conflicts with environmental regulations and permits. All conflicts must be resolved in favor of the environmental permit prior to actual conduct of the demil operations, except when the Commanding Officer authorizes demil in emergency situations.

c. Documentation of the detailed chemical, physical and quantitative characteristics of any PEP must be obtained prior to demil. Residue samples must be tested for appropriate hazardous waste characteristics prior to ultimate disposal.

6. Specific Environmental Requirements.

a. Environmental Coordinator will instruct demil personnel in hazardous waste management procedures and contingency plan implementation to assure performance of duties is accomplished without release of hazardous waste to the environment.

b. Demil personnel must successfully complete classroom instruction that teaches them to perform their duties in a way that ensures the depot's compliance with environmental requirements. Employees who have not completed this training must not work in unsupervised positions. Demil personnel must also take part in an annual review of the initial training.

c. Environmental Coordinator shall inspect demil grounds not less than once per quarter to ensure compliance with environmental regulations and SOP. All inspections will be followed by a written report to the Commanding Officer identifying deficiencies and corrective action. Copies of inspection reports will be provided by MSC environmental offices and to HQ AMC, ATTN: AMCEN-A, 5001 Eisenhower Ave., Alexandria, VA. 22333-0001.

d. Open detonation (OD) of hazardous waste explosives will be conducted in strict compliance with Federal, State and local regulations.

e. After each day's operations, surface exposed scrap metal, casings, fragments, and related items shall be recovered.

GENERAL SAFETY REQUIREMENTS (Con't)

E. DEMILITARIZATION REQUIREMENTS (Con't)

f. OD operations will be assessed for noise impacts. Noise pollution sources will be incorporated into the Installation Compatible Use Zone (ICUZ) Program.

g. OD of HC, colored smoke, WP, RP and riot control munitions is prohibited.

7. Security.

a. All items designated as sensitive and assigned a risk category retain that status until such time as demil or other recertification criteria has been accomplished.

b. Demil assets will be stored IAW security risk categories in magazines and igloos which have special door locks. The key custodian will issue keys on a signature basis to authorized person. The two-man rule will apply throughout the operation.

8. Storage.

a. Repackaging of demil account material in storage will not be accomplished for the sole purpose of achieving one light box per pallet or per lot.

b. Demil account material that is stored in containers previously marked a "light boxes" will not be remarked solely to comply with the latest revision of Dwg. 8796522 or MIL-STD 129. Accurate quantities shall be marked on boxes.

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR: <u>Detonation of High Explosive Loaded</u> <u>Ammunition Items and certain Pyrotechnics;</u> <u>various FSCs and DODICs; various Hazard</u> <u>Class and Fire Symbols</u>	B. OPERATION NO. <u>1</u> C. BAY NO. <u>Demolition Grounds</u> D. SOP NO. <u>FW-0000-G-003</u> DATE <u>16 Aug 72</u> E. REV NO. <u>2</u> DATE <u>27 Feb 87</u> F. CHANGE NO. _____ DATE _____
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G. OPERATION: Receive items for detonation, unload and unpack

H. EXPLOSIVE LIMITS: **UNITS:** As Required **EXPLOSIVE LBS:** 10,000 lbs below ground
5,000 lbs above ground

I. PERSONNEL LIMITS: **OPERATORS:** Receive - 2 **TRANSIENTS:** _____
Unpack - 6 3

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(S) (SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Receive items for destruction at Demolition Site from storage via approved tractor with trailer IAW SOP FW-0000-L-002.	1a. (S) Appropriate fire symbol will be displayed in such a manner as to be easily visible from all roads of approach, when explosives are present. 1b. (O) Authority for destruction must be supplied before or with items. 1c. (S) Employees will leave their assigned depot badge with attendant at Bldg 601 just inside Gate 209 and obtain a special demolition badge. Upon leaving the area, special badge will be returned and assigned depot badge will be picked up.
2.	Spot carrier at operational site designated by Demolition Grounds Supervisor	2a. (O)(S) Operators will prepare the operational site under the direction of the area foreman.
3.	Unload carrier either manually, by use of conveyor, or by forklift and position on site designated by supervisor.	3a. (O)(S) After unloading operation is completed Forklift operator and truck drivers will retire with vehicles to area outside roadblock. 3b. (O)(S) Fire symbols shall be removed from vehicle immediately after unloading.
4.	Unpack items as required.	4a. (O) When classified material is being destroyed, it will be accomplished IAW AR 380-5. Sensitive items will be accomplished IAW DOD 4160-21-M-1. 4b. (O)(S) Supervisor or designated individual will insure that all roadblocks leading to the demolition area from the south are blocked off and posted. Immediately prior to destruction operation, supervisors or designated individual will secure roadblock by closing and hooking double gate which completely crosses the road leading to destruction site from the North.

- 4c. (O) (S) No other person except supervisor or designated individual will be permitted to open or close the roadblocks.
- 4d. (S) Supervisor or designated individual will check telephone at control tower prior to destruction operation. If telephone is out of order, immediately contact Attendant at Gate 209 in person or by two-way radio. Supervisor will also contact Depot telephone operator so that communications can be restored.
- 4e. (S) Two-way radio communication will be maintained.

K SPECIAL REQUIREMENTS:

- 1. Applicable portion of "General Safety Requirements" will be strictly adhered to.
- 2. Disposition of generated packing material and components will be as stated for each item being processed.
- 3. Exposed explosives will not be handled by forklift or truck.
- 4. Forklift, when not in actual use, will have forks at ground level and have brakes set. Forklift will be provided with overhead guards in accordance with provisions of TM 743-200.
- 5. Free exits from operating sites will be maintained at all times.
- 6. Personnel and explosive limits will be complied with.
- 7. Personnel working with MHE equipment will wear hard hats.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

ITEMS	QTY	SPEC/NSN
Carrier	As Required	
Fork Lift	1	
Safety Goggles/Face Shield	As Required	ANSI-Z-871/L-F-36
Leather or Leather-palmed Gloves	As Required	JJ-G-451
Coveralls, Flame Resistant	As Required	
Fire Symbols	As Required	
Conveyor, Roller	As Required	
Safety Shoes	As Required	MIL-S-41821
Hand Tools	As Required	
Cutters, Steel Strapping	1	
Hard Hats	As Required	

OPERATIONS FORMAT

(Normal Operation)

A. **STANDING OPERATING PROCEDURE FOR:** Detonation of High Explosive Loaded
Ammunition Items Certain Pyrotechnics;
various FSCs and DODICs; various Hazard
Class and Fire Symbols

B. **OPERATION NO.** 2

C. **BAY NO.** Demolition Grounds

D. **SOP NO.** FW-0000-G-003 **DATE** 16 Aug 72

E. **REV NO.** 2 **DATE** 27 Feb 87

F. **CHANGE NO.** _____ **DATE** _____

G. **OPERATION:** Prepare Explosives and Ammunition for Detonation

H. **EXPLOSIVE LIMITS:** **UNITS:** As Required **EXPLOSIVE LBS:** 10,000 lbs below ground
5,000 lbs above ground

I. **PERSONNEL LIMITS:** **OPERATORS:** 11 **TRANSIENTS:** 3

J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Prepare sets for demolition	<p>1a. (O) Items will be in intimate contact with each other; a more thorough destruction may be obtained by pyramiding.</p> <p>1b. (O)(S) No more than two certified persons will place caps for detonation. All personnel except those capping sets and Ammo Inspector will retire to the control tower or Bldg 601 at Gate 209.</p> <p>1c. (S) The supply of blasting caps required for the operation will be at a minimum of 25 feet from the supply of explosives.</p> <p>1d. (S) The preparation of non-electric-primed charges will be performed no less than 25 feet from the supply of blasting caps or other explosives.</p>
2.	Prepare pit for detonation.	<p>2a. (O)(S) When items are covered with earth, pit will be a minimum of 4 feet deep and covered with a minimum of 2 feet of earth. Earth cover will be a minimum of 10 feet when detonating over 5000 lbs.</p> <p>2b. (O)(S) Demolition blocks will be placed in intimate contact on top of items to be detonated and held in place by earth over the demolition blocks.</p> <p>2c. (O) Blasting caps will not be buried beneath ground level with the initiating charge. The initiating explosives will be primed with detonating cord of sufficient length to reach up through the covering to a point where the blasting cap may be connected above ground level.</p>

3. Prepare time blasting fuze
- 3a. (S)(O) Time blasting fuze will be tested as follows at the beginning of each shift and/or new roll:
- (1) Using crimper, M2, cut and discard a 6-inch length from free end of fuze to prevent a misfire caused by exposed powder absorbing moisture from the air.
 - (2) Cut off a 3-foot length of time blasting fuze to check burning rate.
 - (3) Ignite fuze and note the time it takes for fuze to burn.
 - (4) Compute burning rate per foot by dividing time in seconds by length in feet.
 - (5) Cut time blasting fuze long enough to permit person detonating the charge to reach a safe distance by walking at a normal pace before the explosion. Under no circumstances should a fuze be used that is less than 3-feet long or burns through in less than 120 seconds. Variations in burning time must be considered.
4. Connect non-electric blasting caps.
- 4a. (O)(S) Remove any foreign matter that may cause a misfire by holding open end down and shaking gently.
- 4b. (O)(S) Hold non-electric blasting cap away from face and body at all times.
5. Utilize detonating cord firing system as applicable.
- 5a. (O)(S) Cut off at least 6 inches from each free end to be connected. Tape cut off pieces to the charge to avoid separate disposal.
- 5b. (O)(S) Overlap the newly cut free ends by 18 inches.
- 5c. (O)(S) Secure cords together with detonating cord clips, 6 inches from each end of the free ends and 6 inches from each other.
- 5d. (O)(S) A square knot may be used provided at least 6-inch length extend from the point of connection.
6. Contact the Attendant at Gate 209 by radio or in person to assure that all personnel who have entered the area are accounted for and allow no one to enter until further word from the supervisor.

K. SPECIAL REQUIREMENTS:

- 1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
- 2. Ammunition filled with WP or PWP will not be destroyed except in emergency situations and only with the approval of the Commander, AMC and destruction by burning determined on a case-by-case basis.

K. SPECIAL REQUIREMENTS Con't)

3. Effects of contact with the skin with explosives vary from simple discoloration to dermititis and from headache to poisoning because of absorption through the skin. Hands should be dry when handling explosives since moisture increases absorption through the skin. Wash hands thoroughly after handling small quantities of explosives.

4. Containers of explosives will not be carried directly on the forks of a lift truck without skids or pallets.

5. Each detonation setup will be inspected prior to initiation to insure proper setup.

6. Only non-electric detonation will be accomplished. Ref: Exemption No. FWDA-E-1-87.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

ITEM	QTY	SPEC/NSN
Carrier	As Required	
Forklift, Gas	1	
Safety Goggles/Face Shield	As Required	ANSI-Z-871/L-F-36
Leather or leather-palmed gloves	As Required	JJ-G-451
Flame-retardant Clothing	As Required	MIL-C-14610
Safety Shoes	As Required	MIL-S-41821
Approved Crimpers, Cap	1	MIL-C-43438
Hard Hats	As Required	
Shovels	As Required	5120-00-188-8450
Tape, Friction or equal	As Required	HH-1-510
Blasting Caps, non-electric	As Required	1375-M131
Demo Blocks	As Required	
Flaked TNT	As Required	1376-00-672-0265
Fuze, Blasting Time	As Required	1375-M670
Cord, Detonating	As Required	1375-M456
Igniter, Time Blasting Fuze	As Required	1375-M766
Gloves, Rubber	As Required	ZZ-G-321
Barrel with water	As Required	
Approved Hand Tools	As Required	
Two-way Radio or telephone	As Required	
Cotton Underclothing	As Required	

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR: Detonation of High Explosive Loaded
Ammunition Items and Certain Pyrotechnics;
various FSCs and DODICs; various Hazard
Class and Fire Symbols

B. OPERATION NO. 3

C. BAY NO. Demolition Grounds

D. SOP NO. FW-0000-G-003 DATE 16 Aug 72

E. REV NO. 2 DATE 28 Feb 87

F. CHANGE NO. _____ DATE _____

G. OPERATION: Prepare and Initiate Non-Electric Firing System

H. EXPLOSIVE LIMITS: UNITS: As Required EXPLOSIVE LBS: 10,000 lbs below ground
5,000 lbs above ground

I. PERSONNEL LIMITS: OPERATORS: 2 TRANSIENTS: 0

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTIONS (SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS)
----------	-------------	--

- | | | |
|----|----------------------|--|
| 1. | Attach fuse igniter. | 1a. (0) M60:
(1) Unscrew fuse holder cap two or three turns but do not remove.

(2) Press shipping plug into igniter to release it and rotate plug to remove it from igniter.

(3) Insert free end of time fuse as far as possible into cavity.

(4) Tighten cap hand-tight to hold fuse in place to weather-proof joint.

1b. (0) M2:
(1) Insert free end of time blasting fuse into igniter as far as it will go. It is held in place by a pronged fuse retainer.

1c. (0) M1:
(1) Insert free end of time blasting fuse into igniter as far as it will go. It is held in place by a pronged fuse retainer.

(2) Carefully place priming adapter over blasting cap until it stops, insert into cap well of explosive, and screw adapter into place. If no priming adapter is available, insert blasting cap into cap well and tie it in place with a string or fasten it with tape. |
| 2. | Initiate Charge. | 2a. (0)(S) Supervisor in charge of demolition will give approval to initiate charge when it is observed that the demolition site is clear of personnel and livestock, air is clear of aircraft, and warning flag has been raised.

2b. (0) M60: To fire, hold barrel in one hand and remove safety pin. Grasp pull ring and push in and rotate to insure igniter is set. Take up slack before making the final strong pull to fire igniter. In the event of a misfire, fuse igniter can be reset quickly without disassembly by pushing plunger all the way in and attempting to fire as before. |

- 2c. (O)M2: To fire, hold barrel in one hand and pull on pull ring with the other hand.
- 2d. (O)M1: To fire, hold tube in one hand and pull handle with other hand.
- 2e. (O) Matches: Split fuze at end, placing head of an unlighted safety match in powder train, and lighting inserted match head with flame from another match.
3. Retire to Control Tower.
- 3a. (O)(S) Personnel withdrawal from demolition site will be as follows:
(1) Vehicle with driver and motor running will be at site to evacuate personnel to Control Tower, or
(2) Personnel will withdraw on foot by walking at a normal pace to reach Control tower before explosion.
(Ref: Operation No.2, para 3a(5))
- 3b. (S) Viewing ports will be closed upon initiation of explosives and periscope will be used to view detonation.
- 3c. (O)(S) In the event of misfires, personnel will not return to the point of detonation for least 30 minutes after which Surveillance representative and Supervisor will investigate the misfire. After determining the cause of misfire, proceed with Operation No. 4 of this SOP.
4. Supervisor and Surveillance representative will make a thorough search of the surrounding area after each detonation for unexploded items or loose lumps of explosives. All unexploded items will be staked with a white flag.
- 4a. (O)(S) Lumps of explosives or unfuzed ammunition may be picked up and prepared for the next detonation.
- 4b. (O)(S) Fuzed ammunition or items which may have internally damaged components will be detonated in place.
- 4c. (O)(S) When no unexploded items are encountered and operations are to be continued, demolition site will be thoroughly checked for hot fragments, burning embers, etc., before demolition site is reused.

5. Notify Fire Department in case of uncontrolled fire.
 - 5a. Fire Department will not approach demolition site for the purpose of extinguishing grass or brush fires without clearance from the demolition supervisor.
6. Police demolition site.
 - 6a. (O)(S) Scrap metal from demolition operations will be picked up manually or by use of an electric magnet. All scrap metal will be flashed prior to transfer to Property Disposal Officer.
 - 6b. DA Form 4508 and DD Form 1348-1 will be prepared and authenticated by Chief, Ammunition Mission Division and Surveillance representative for all salvageable materials being transferred to Property Disposal Officer.
7. Grade and level demolition site.
 - 7a. (S) Powered equipment will not be permitted to enter the demolition site without the approval of the area supervisor.
 - 7b. (S) Supervisor or his designated representative will be present during grading operations.
 - 7c. (S) Continuous searches will be made to ascertain if any unexploded items have been uncovered.
 - 7d. (S) Unexploded items will be immediately reported to the area supervisor for detonation process.
 - 7e. (S) Operator will not remove unexpected items from tracks, wheels, etc., since possibility of detonation exists during removal.

K. SPECIAL REQUIREMENTS:

1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
2. Operators will wear dust respirators as required.
3. Good housekeeping will be maintained.
4. Warning device (flag and/or warning light) will be displayed when demolition is being performed.
5. Operators will wear hearing protection as required.
6. Operators working with exposed TNT and explosives containing TNT will be examined at regular and frequent intervals for evidence of chemical intoxication. Operators found to have systemic poisoning will be removed from the hazardous area and placed under close medical supervision.
7. Duds will be detonated in place.
8. Supervisor will be aware of physical condition of all crew members.
9. Supervisor will maintain a permanent log register of all demolition activities. This will include: pit number, pit depth/cover, date, time(s) destroyed, net explosives (lbs), type initiating explosive, net initiating explosive (lbs), total explosive destroyed (lbs), applicable remarks and initial.

GENERAL SAFETY REQUIREMENTS (Con't)

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

ITEM	QTY	SPEC/NSN
Vehicle for Evacuation	1	
Safety Goggles/Face Shield	As Required	ANSI-Z-871/L-F-36
Flame Retardant Clothing	As Required	
Safety Shoes	As Required	MIL-S-41821
Approved Crimpers, Cap	1	
Barrel with Water	As Required	
Grader	1	
Electric Magnet	1	
Cotton Underclothing	As Required	
Fire Equipment	As Required	
Two-way radio or telephone	As Required	
Warning Flags	As Required	
Power Equipment for Grading	As Required	

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR: Detonation of High Explosive Loaded Ammunition Items and Certain Pyrotechnics; various FSCs and DODICs; various Hazard Class and Fire Symbols

B. OPERATION NO. 4

C. BAY NO. Demolition Grounds

D. SOP NO. FW-0000-G-003 **DATE** 16 Aug 72

E. REV NO. 2 **DATE** 28 Feb 87

F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Misfire Procedures

H. EXPLOSIVE LIMITS: UNITS: As Required **EXPLOSIVE LBS:** As required from Operation No. 3

I. PERSONNEL LIMITS: OPERATORS: 2 **TRANSIENTS:** 0

J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Non-Electric Misfires.	<p>1a. (S) Misfires will not be investigated until 30 minutes have elapsed after expected time of detonation.</p> <p>1b. (O)(S) Investigation and correction will be made by the supervisor/operator who placed charge and surveillance representative.</p> <p>1c. (O) If misfired charge is not tamped, lay a primed 1-pound charge at side of misfired charge without moving or disturbing it, and fire.</p> <p>1d. (O) If misfired charge has no more than a foot of tamping, attempt to explode it by detonating a new 2-pound charge placed on top.</p> <p>1e. (O) If the misfired charge is located in a tamped borehole, or if placement of tamped charge makes above procedure impractical, follow either of the below listed procedures:</p> <p>(1) Procedure No. 1:</p> <p>(a) Carefully remove tamping by non-sparking tools.</p> <p>(b) Dig until charge is within one foot of being uncovered. WARNING: Digging into charge may initiate charge. Check on depth and direction of borehole during digging to minimize danger of striking charge or placing a new charge too far away to induce detonation.</p> <p>(c) Insert a new, primed charge on top of misfired charge.</p> <p>(d) Detonate new charge. Use detonating cord to prime underground or above ground charges whenever possible.</p> <p>(2) Procedure No. 2:</p> <p>(a) Carefully dig a new hole to within one foot and to the same depth as old hole.</p> <p>(b) Place a new, primed charge in new hole and detonate.</p>

2. Detonating Cord Misfires

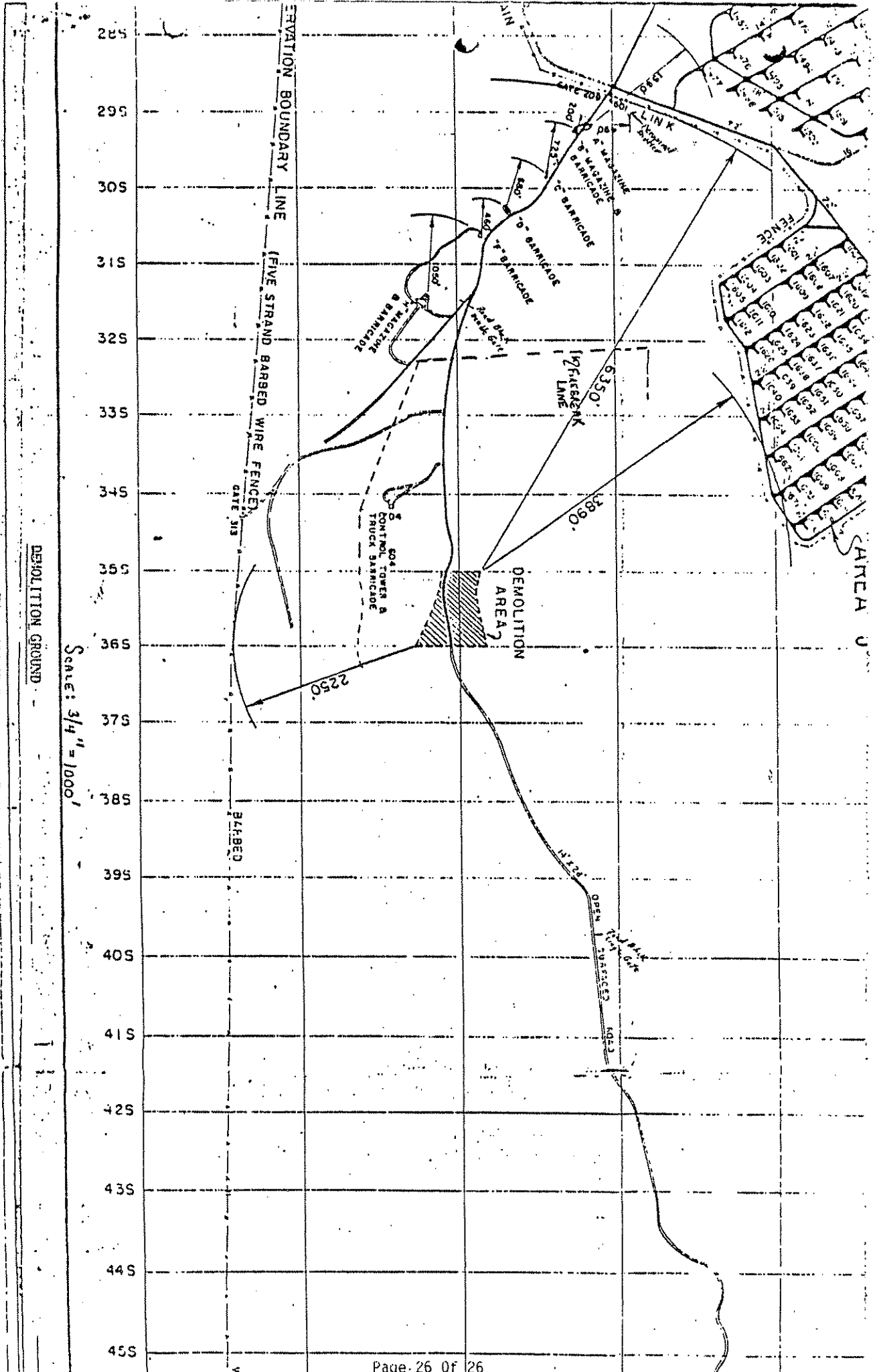
- 2a. (O) (S) Failure of nonelectric Blasting Cap.
(1) If non-electric blasting cap attached to detonating cord fails to function, delay investigation for at least 30 minutes.
(2) Cut detonating cord main line between the blasting cap and the charge, and fasten a new blasting cap on the detonating cord.
- 2b. (O) (S) Failure of detonating Cord.
(1) If detonating cord fails to function, at explosion of an exposed non-electric blasting cap, investigate immediately.
(2) Attach new blasting cap to detonating cord, taking care to fasten it properly.
- 2c. (O) (S) Failure of Branch Line.
(1) If detonating cord main line detonates but a branch line fails, fasten non-electric blasting cap to branch line and fire it separately.
- 2d. (O) (S) Failure of Charge to Explode
(1) If charge is above ground, and detonating cord leading to charge detonates but charge fails to explode, delay investigation until it is certain that charge is not burning, but not less than 30 minutes.
(2) If charge is intact, insert new priming.
(3) If charge is scattered by detonation cord, reassemble as much of original charge as possible, place new charge if necessary, and reprime. Make every attempt possible to recover all explosives scattered by misfire.
(4) Fuzed items which may have internally damaged components will be detonated in place.

K. SPECIAL REQUIREMENTS:

1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
2. "Special Requirements" and specific safety instructions of Operations 2 and 3 will be complied with.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

As applicable from Operations 2 and 3.



DEMOLITION GROUND

Scale: 3/4" = 1000'

SOP COVER SHEET
1. FORT WINGATE DEPOT ACTIVITY
STANDING OPERATING PROCEDURE FOR:

2. ITEM Destruction of Ammunition
and Explosives by Burning;
various FSC's and DODIC's;
various Hazard Classes and
Fire Symbols

3a. OPERATION Demilitarization

3b. ESTIMATED DAILY PRODUCTION RATE As Required

4. DEPOT ORGANIZATION SYMBOL: SDSTE-FWH

5. SOP No. FW-0000-H-008 DATE: 16 AUG 72

5a. REV No. 2 DATE: 20 FEB 87

5b. CHANGE No. _____ DATE: _____

6. AUTHORITY Applicable DMWR's, TM's,
FM's (See References)

7. PREPARED BY Dorothy J. Fijalkowski
Dorothy J. Fijalkowski

TITLE Distribution Facilities Specialist

PHONE EXTENSION: X350

8. REVIEWED BY: Rudolf Q. Ortiz
Rudolf Q. Ortiz

TITLE Explosives Operator Foreman

9. SUBMITTED BY: Dorothy J. Fijalkowski
Dorothy J. Fijalkowski

TITLE Distribution Facilities Specialist

10. CONCURRENCES:

OFFICE	SIGNATURE	TITLE
<u>Program Manager</u>	<u>Adrian Bond</u> Adrian Bond	<u>Environmental Coordin.</u>
<u>Ammunition Mission</u>	<u>Alfred P. Pino</u> Alfred P. Pino	<u>Chief, Ammo Mission DI</u>
<u>Surveillance</u>	<u>Gaylon Ray</u> Gaylon Ray	<u>Chief, Surveillance DI</u>
<u>Support Division</u>	<u>Henry George</u> Henry George	<u>Chief, Support Div.</u>
<u>Safety</u>	<u>LT. Huntley</u> LT. Huntley	<u>Safety Officer</u>
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

11. APPROVAL Nelson A. Miller
NELSON A. MILLER
Major, OrdC, Commanding

12. BIENNIAL REVIEW:

DATE	SIGNATURE	TITLE
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____
_____	_____	_____

3. References:

- a. AMCR 385-100
- b. AMC-R 700-107
- c. DMWR 9-1300-0000-X4
- d. DMWR 9-1300-0001-D1
- e. DMWR 9-1300-0002-X1
- f. DMWR 9-1315-0000X5
- g. FM 5-25
- h. TM 9-1300-203
- i. TM 9-1300-206
- j. TO 11A-1-42
- k. SOP FW-0000-L-002
- l. TM 9-1300-277
- m. Surveillance Policy Memo Nr. 86-32
- n. AR 380-5
- o. TM 743-200
- p. AMC-R 755-8
- q. AMC-R 350-4

GENERAL SAFETY REQUIREMENTS

A. RESPONSIBILITIES.

1. The responsibility for the operation, maintenance and security of the ammunition explosives demolition area rests with the Commanding Officer and his delegated representatives as follows: Chief, Ammunition Mission Division and Explosives Operator Foreman, who will exercise complete jurisdiction over all activities scheduled for accomplishment within the area.

2. Only the Commanding Officer, Chief, Ammunition Mission Division, Chief and QA Specialist of Surveillance, Explosives Operator Foreman and Ammunition Inspector will be permitted to enter the demolition area without first obtaining clearances from the Chief, Ammunition Mission Division. Fire protection personnel, security guards and medical personnel may enter only when on emergency duty or at the discretion of the Commander; under all other circumstances, permission to enter this area will be obtained.

B. PERSONAL SAFETY REQUIREMENTS:

1. Standard Operating Procedure (SOP), applicable portion, shall be conspicuously posted. Supervisory personnel shall maintain copies of complete SOP and be responsible for the enforcement of its provisions.

2. There will be no deviation or change from the approved SOP without prior approval of the installation Commander or his designated representative.

3. Employees will not tamper with any safety devices or protective equipment.

4. Any defect or unusual condition noted that is not covered in this SOP will be reported immediately to supervisory/QASAS personnel.

5. Appropriate fire symbol and/or chemical hazard symbol shall be displayed in such a manner as to be easily visible from all roads of approach.

6. Care will be taken to limit exposure of a minimum number of personnel, for a minimum time, to a minimum amount of hazardous material consistent with safe and efficient operations.

7. Personnel will be so located that operators will have an unobstructed path of travel to the nearest available exits.

8. Work locations will be maintained in a neat and orderly condition.

9. All handtools shall be maintained in a good state of repair.

a. Supervisor will perform daily inspection of hand tools and mechanical devices to insure that they have not become unsafe for use as designated, either to the item being worked or to the operator.

b. Tools used in operations with exposed explosives will be of non-sparking materials.

10. Personnel in proximity to steel banding operations will wear face shields and safety eyewear. Operators handling metal banding will also wear leather or leather-palmed gloves.

11. Operators lifting material will use proper, safe hand holds, assume proper lifting position, avoid twisting when lifting or carrying, and avoid sharp objects.

12. Leather or leather-palmed gloves will be worn when handling wooden boxes.

13. Steel-toed safety shoes will be worn by all personnel engaged in material handling operations.

14. Explosives-loaded ammunition, packaged ammunition or bulk explosives shall not be handled roughly, thrown about, tumbled, dropped, or walked over other explosives or ammunition. Large ammunition items, packaged in DOT approved containers designed to permit dragging, rolling or towing, may be so moved when necessary during handling.

15. Each MHE and/or vehicle operator will have in his possession a valid operator's permit for the particular piece of equipment to be operated.

GENERAL SAFETY REQUIREMENTS (Con't)

16. Material Handling Equipment and other lifting devices will have the load rating and date of next inspection marked on them. The load rating will not be exceeded and the equipment will not be used without a current inspection date.
17. Forklift load will not exceed its rated capacity and will not be in motion while raising or lowering load.
18. The supervisor will prevent, wherever possible, accumulation of excess material or personnel. Any accumulated excess material will be removed immediately. Likewise, personnel in excess of posted limits will be requested to leave.
19. Roller conveyors shall be used where practical.
 - a. Supports, such as horse-type, should be sufficiently substantial to give solid support under operating conditions.
 - b. Boxes should not be used as supports unless they are safe from overturning and are securely tied together when more than one is used.
 - c. Containers of hazardous materials shall not be used as conveyor supports.
 - d. Loaded ammunition items should not be left on conveyors during non-operating periods.
 - e. Employees will not walk or stand on conveyors at any time.
20. Matches, lighters, or other spark-producing devices are forbidden in the Ammunition and Burning area, except where written authority has been granted by the Commanding Officer or his designated representative.
21. In the event of an electrical storm, all demolition activities will be stopped and all personnel will be evacuated from the area. When approved shelters are not available, personnel will be withdrawn to places at inhabited building distances from the hazardous location. Ref: Surveillance Policy Memo 86-32.
22. When threatened by fire or explosion, a location containing explosives/hazardous material will be evacuated immediately.
23. Two fire extinguishers (dry chemical) in good working order will be maintained at all operating lines where work is performed, and be readily accessible for instant use.
24. Operations will cease immediately in case of accident or serious injury. Notify Dispensary, Chief, Ammunition Mission Division, Quality Assurance Division and Safety Officer immediately by telephone, car radio or messenger. Relate the type of injury, seriousness, and exact location of injured personnel. Supervisor will be responsible for the initiation of all accident and injury reports.
25. All employees handling or storing material treated with Pentachlorophenol (PENTA) should be aware of the following guidance:
 - a. The degree of hazard associated with PENTA treated packing materials cannot be determined by visual examination. There are no quantifiable criteria to use in judging such items as "loose" or "excessive", therefore, the following information is disseminated to provide final guidance on protective measures for handling PENTA treated wood. This guidance should be followed under the direction of a resident industrial hygienist who has evaluated the actual PENTA exposure in question.
 - b. The following protective measures are recommended for handling PENTA-treated lumber.
 - (1) Prevent inhalation, ingestion, skin and eye contact.
 - (2) Good housekeeping is essential to prevent reentrainment of PENTA crystals or wood dust.
 - (3) Prevention of skin and eye contact through the use of gloves, coveralls, and goggles. The type of gloves to be worn is dependent upon the characteristics of the wood being handled. If the wood is wet or tacky, gloves made of nitrile rubber or polyvinyl chloride (PVC) should be worn. Leather-palmed gloves offer proper skin protection when handling properly treated wood. Perspiration build-up may allow PENTA to permeate through leather gloves; therefore, only dry leather-palmed gloves should be worn, coveralls which are laundered on a routine basis (preferably daily) should be worn. The coveralls should not be taken home but should remain at the work site. When handling wood with visible crystals of PENTA or when generating wood dust, chemical goggles should be worn.

GENERAL SAFETY REQUIREMENTS (Con't)

(4) A National Institute for Occupational Safety and Health (NIOSH) approved dust mask must be worn when sawing and machining treated wood. If the airborne PENTA concentration exceeds, or is expected to exceed, the threshold limit value (TLV) of 0.5 MG/M3 timeweighted average, a NIOSH-approved organic vapor respirator with dust prefilter must be worn.

(5) No smoking, eating, or drinking should be permitted in the work areas. Separate break areas and washing facilities should be provided. Personnel should wash hands prior to eating, drinking, smoking, or using toilet facilities. All exposed areas of the body should be washed at the end of each workday.

c. Guidance on handling lumber treated with zinc naphthenate and copper naphthenate - prevent inhalation, ingestion, and skin contact.

(1) Good housekeeping - See b(2).

(2) Personnel should wash hands before eating, drinking, smoking, and using toilet facilities. All exposed areas of the body should be washed at the end of each workday.

(3) Leather-palmed gloves should offer proper skin protection. If skin irritation is noted, a vinyl-coated glove can then be substituted. Coveralls may be required if irritation is noted for other areas of the body.

(4) A NIOSH-approved dust mask should be worn when sawing and machining treated wood.

d. The U.S.Army Environmental Hygiene Agency provides the following sampling guidance for monitoring personnel exposed to PENTA; however, supporting laboratories should be contacted to verify their particular sampling protocol:

		SAMPLE RATE		SAMPLE VOL	
		OR TIME		IN LITERS	
		MIN	MAX	MIN	MAX
(1)	Carried by Sawdust	Filter Cassette closed-face with spacer (or 0.8 micron)	1-2 Liters/ minute	50	500
(2)	Vapor	Midget Impinger (15ML of Ethylene Glycol)	1.5 Liters/ Minute	100	240.

e. If the level of 0.5 MG/M3 time weighted average is exceeded, adequate precautions must be taken to reduce worker exposure to a safe level.

C. BURNING REQUIREMENTS:

1. General Requirements for the Destruction of Explosive Materials

a. Explosives and ammunition which are dangerously deteriorated or cannot be definitely identified shall be destroyed by an approved method. Destruction shall not be undertaken without prior approval of the Commander, AMC, ATTN: AMCSF, unless the local commander decides that immediate destruction of deteriorated explosives or ammunition is necessary for the protection of life and property. When destruction is authorized, the provisions of all current Army directives involving lost, destroyed, damaged or unserviceable property must be observed. Prior approval for destruction of routine waste is not required. Compliance with applicable Federal, State and local environmental restrictions and permits is mandatory. Review of all SOPs for explosives and ammunition by the Installation Environmental Coordinator is mandatory.

2. DESTRUCTION SITES.

a. Site selection, physical security, personnel training, emergency equipment and procedures are governed by applicable Federal, State, and local environmental regulations, particularly, applicable hazardous waste regulations, and by the Safety considerations as follows. Open burning operations will be conducted in accordance with applicable air, hazardous waste, and other environmental permits. The site selected for the destruction of explosives and ammunition shall be located at the maximum practicable distance from all magazines, inhabited buildings, public traffic routes, and operating buildings; but not less than 2,400 feet unless pits or similar aids are used to limit the range of fragments and debris. When trials required by paragraph b. below prove that fragments and debris are limited to lesser ranges the appropriate inhabited building distances may be used. Sites must also be located in relation to the direction of prevailing winds, so that sparks will

GENERAL SAFETY REQUIREMENTS (Con't)

BURNING REQUIREMENTS (Con't)

not be blown toward explosives location. Where possible, natural barricades shall be used between the site and operating buildings or magazines. When destroying explosives by burning, the possibility that the mass may detonate must be recognized and appropriate protective barriers or distance separation should be used for protection of personnel and property.

b. In all disposal and destruction activities, the number of units or quantity of explosives that may be destroyed safely at one time shall be determined carefully by starting with a limited number or quantity and then gradually increasing that quantity until the optimum amount consistent with safe and efficient operations is determined.

c. Dry grass, leaves, and other extraneous material in amounts sufficient to spread fire shall be removed within a radius of 200 feet from the point of destruction. The grounds should be of well packed earth and shall be free from large stones and deep cracks in which explosives might lodge. Explosive materials shall not be burned on concrete mats.

d. Fire-fighting facilities shall be readily available to extinguish brush or grass fires. At least 2 hours prior notification will be given to Fire Department.

e. Ordinary combustible rubbish shall be burned at a location removed from places where explosives and explosives contaminated material are destroyed. Where limited space does not permit separate burning areas, a part of the explosives destruction ground may be reserved for burning rubbish provided the two areas are not operated simultaneously, and the area where rubbish has been burned is wetted down and inspected before explosives burning is resumed.

f. The burning grounds shall be serviced with telephones or two-way radio communication.

3. Explosives Material Awaiting Destruction.

a. Explosives material awaiting destruction shall be stored at not less than intraline distance, based on the largest quantity involved, from explosives being destroyed. The material shall be protected against accidental ignition or explosion from fragments, grass fires, burning embers, or detonating impulse originating in materials being destroyed.

4. Personnel Protection.

a. Adequate protection for personnel shall be provided in the form of face shields with overhead and frontal protection as a minimum. Where circumstances warrant their use, complete personnel protection shall be provided. Such structures should preferably be located at the appropriate inhabited building distance for the quantity and type of materials being detonated but in no case will this distance be less than 300 feet. Employees must use such protection when explosive materials which may detonate are being burned. When Class 1.3 material is being destroyed by burning, personnel must remain at the greatest practicable distance from the burning site but in no case shall personnel be permitted closer than the applicable public traffic route distances.

b. During disposal and destruction operations, the number of people in the area exposed to the hazard must be kept to a minimum. Warning signs or road blocks shall be posted to restrict the area and to ensure proper segregation of activities. The number of personnel engaged in the disposal and destruction operations shall be no fewer than two and operations shall be arranged so that not all of the personnel are exposed to an incident. Personnel engaged in burning explosives should be provided with flame resistant type clothing.

5. Supervision and Training.

a. The disposal area and its operations shall be under the direct control and supervision of an experienced and trained supervisor charged with the responsibility for all activities within the area. He shall be present during all burning operations. During his absence, a competent qualified person will be designated to be in charge. He shall also be charged personally with the sole custody of all ignition devices. Prior to actual burning of explosives, all personnel including the demolition ground supervisor will be evacuated to a safe distance or protective structure affording adequate protection but consistent with the need to monitor the total operation until it is complete.

b. Personnel employed at the destruction area shall be thoroughly trained regarding the nature of the materials handled and the hazards involved. It is essential that thorough training and vigilant supervision be provided.

GENERAL SAFETY REQUIREMENTS (Con't)

BURNING REQUIREMENTS (Con't)

c. In the absence of specific regulations covering any phase of the destruction of explosive material, complete information will be forwarded through command channels to the Commander, AMC, ATTN: AMCSF, requesting instruction and guidance.

6. Containers for Waste Explosives.

a. Explosives destined for the burning ground shall be in original closed packages or in containers of fire-retardant materials which will not contribute to the existing hazard by readily producing sparks when contacting rocks, steel, or other containers. Bags or containers made from easily ignited material shall not be used. Containers shall have closures that will prevent spilling or leakage of contents when handled or if overturned. Closures shall be of a type that will not pinch or rub explosive during closing or opening. The closures and surfaces of container openings shall be thoroughly cleaned of explosive contamination to minimize the hazard during closing or opening.

7. Servicing of Destruction Site.

a. Trucks transporting explosive material to burning grounds shall meet the requirements of AMC-R 385-100, Chap 22. No more than two persons shall ride in the cab.

b. Upon arriving at the burning grounds, trucks may distribute explosives containers or explosives items to be destroyed at sites where destruction is to take place. As soon as all items have been removed, trucks shall be withdrawn from the burning area to a safe location until destruction is completed. Containers of explosives shall not be opened until the truck has been withdrawn.

c. Containers of explosives or ammunition items to be destroyed at the destruction site shall be spotted and opened at least ten feet from each other and from explosives material previously laid for destruction to prevent rapid transmission of fire in the event of premature ignition.

d. Empty containers shall be closed and moved a sufficient distance away to prevent charring or damage during burning of the explosives. Empty containers may be picked up by truck on the return trip after delivery of the next quantity to be destroyed.

e. When materials being processed at destruction sites are to be handled by gasoline or diesel-powered forklift truck, the requirements of AMCR 385-100, para 24-2c will be observed. All such material handled will be properly packaged and must not be contaminated with explosives.

8. General Requirements.

a. Except in specific cases, such as Explosive D loaded projectiles, ammunition and explosive shall not be burned in containers.

b. Bulk initiating explosives and others used predominantly in detonators and photoflash compositions shall be destroyed by detonation.

c. Loose explosives, other than initiating explosives, may be burned in trays or pans. Wet explosives may require a thick bed of readily combustible material such as excelsior underneath and beyond to assure that all the explosives will be consumed once the materials are ignited from the end of the layer of explosives the combustible material should be extended in a train to serve as the ignition point. When an ignition train of combustible material leading to the explosives is used, it must be arranged so that both it and the explosive burn in the direction from which the wind is blowing. The combustible train of the explosive, if ignited directly, must be ignited by a safety fuse of a length which will permit personnel to withdraw safely to the protective shelter, should the total quantity of explosives detonate. When a misfire occurs, personnel shall not return to the point of initiation for at least 30 minutes. Not more than two qualified persons will be permitted to examine the misfire:

(1) Loose, dry explosives may be burned without being placed on combustible material if burning will be complete. Qualified inspectors shall examine the sites after each burn to determine if these requirements are met. Volatile flammable liquids shall not be poured over explosives or the underlying combustible material to accelerate burning, either before or during the burning of materials.

GENERAL SAFETY REQUIREMENTS (Con't)

BURNING REQUIREMENTS (Con't)

(2) Wet explosives shall not be burned without first preparing a bed of nonexplosive combustible material upon which the explosives are placed to assure complete burning. It is usually necessary to burn RDX wet to prevent detonation.

(3) Parallel beds of explosives prepared for burning shall be separated by not less than 150 feet. Burning shall not be repeated on previously burned-over plots within 24 hours.

(4) Some types of explosives and tracer or igniter composition give off toxic fumes when being destroyed by burning. Proper respiratory equipment, such as hose masks, airline masks, and self-contained breathing apparatus shall be worn where such fumes are likely to be encountered.

9. Burning Out Leaded HE Projectiles.

a. TNT, Explosive D, Composition B, pentolite, and other explosive filler, in open projectiles may be burned out when destruction by detonation or washing out and burning the explosive filler separately is impracticable.

b. Projectiles to be burned out should be placed on their sides and arranged in groups of not more than six projectiles, with all open ends facing in one direction. Opened ends of projectiles should not be pointed into the wind. Each group of six projectiles should be pointed into the wind. Each group of six projectiles should be separated from adjacent groups by not less than 12 inches in order to reduce the possibility of mass detonation in the event of incident in any one group. Where it has been determined, by trial, that adequate safety is provided from a detonation of an established quantity of explosives in projectiles, this established quantity may be used as the criteria for consolidation when burning out items. Class 1.3 solid propellant (smokeless powder) may be used for ignition of the projectile filler.

c. Combustible material such as excelsior or scrap lumber should be used to ignite the explosive filler. Use of oil-soaked waste or wood treated with pentachlorophenol (PCP) is prohibited.

d. Personnel shall not be permitted to return to the scene of the operation until a competent observer has determined that all explosives have been burned.

e. Burned out projectiles shall be reprocessed to assure that explosive residue does not remain. The projectile shall be thoroughly inspected to assure that all explosives have been destroyed prior to releasing the components for salvage.

D. LOCAL REQUIREMENTS:

1a. All burning must take place during the time period of three hours after sunrise to one hour before sunset.

b. The wind direction at the sight of burning must be such that the smoke will generally be carried away from public roads and areas of human habitation.

c. All burning will cease when atmospheric conditions are such that air stagnation advisory is issued by the U.S. Weather Service.

e. No natural or synthetic rubber products or petroleum products shall be burned.

f. All applicable restrictions, codes and ordinances (e.g., fire codes or ordinances), whether temporary or permanent, of other governmental bodies must be complied with.

g. The Environmental Improvement Division will be notified prior to burning (722-4160).

2a. Obtain weather information from Gallup Flight Service, including but not limited to temperature, visibility, wind velocity, temperature gradient and wind direction. Operations will be conducted at wind speeds not less than 4 MPH and not exceeding 15 MPH. Wind direction will be carefully monitored to preclude dense clouds of smoke from exiting the depot boundary. Meteorological information will be logged and maintained as a permanent record.

GENERAL SAFETY REQUIREMENTS (Con't)

LOCAL REQUIREMENTS (Con't)

b. Notify Gallup Flight Service (722-4308), 12 hours prior to scheduled burn operations and again 2 hours prior to ignition. Once the burning process has been initiated, no attempt will be made to stop it because of the presence of aircraft.

3a. Only personnel with proper security clearance will be utilized when destroying classified items.

b. Supervisor in charge of operation, with required security clearance, must be present during all phases of the burning operation when classified items are present.

c. Proper security measures will be maintained throughout all phases of this operation when processing classified items.

d. Fire symbols and placards will not be removed from vehicles until all explosives have been removed.

e. Area will be scanned and/or searched for livestock and personnel prior to commencement of burning.

E. ENVIRONMENTAL REQUIREMENTS:

1. Accountability.

a. The Ammunition Transfer Record (DA Form 4508) will be used to move demil assets from the storage location to the burning grounds. This form will perpetuate the document number used to adjust the accountable records and will contain the certificate of destruction which is to be maintained a minimum of 2 years.

b. The Ammunition Transfer Record of Approval will be considered the burning work order. Accountable records will be maintained to include lot integrity, quantity, tonnage, and dollar value of items destroyed. The disposition of each asset generated will also be indicated. Complete records will be maintained by the office of record.

2. Ammunition Surveillance.

a. Operations involving the disposal of conventional ammunition and related packing components will be reviewed by QASAS personnel. On-site visits will verify compliance with safety and environmental requirements.

b. QASAS personnel will assure that returned packing material is properly certified as free of explosives or contamination.

c. QASAS personnel will assure adequacy of demil and decontamination processes performed of generated scrap material, including items requiring mutilation.

d. QASAS personnel will assure that functional classification and quality standards of components material generated from demil and scheduled for reuse or sale through DRMO are IAW appropriate DMWRs or LOIs.

e. The Quality Assurance Division will establish procedures to ensure prompt disposal of any material scheduled for demil which could otherwise become more hazardous if retained in storage. Q.A. will work closely with operating authorities and the Safety Office to assure priority is placed on the disposition of these items.

f. The Quality Assurance Division will document the results of all inspections identifying the date, time, supervisor in charge and any deficiencies noted. Deficiencies will be reported through formal channels.

3. Safety.

Operations will be conducted IAW AMC-R 385-100 and the approved technical guidance.

4. Industrial Hygiene.

a. The IH should identify potential hazards, quantity actual exposures, become involved to reduce exposures, and advise personnel on the use of personal protective devices.

GENERAL SAFETY REQUIREMENTS (Con't)

ENVIRONMENTAL REQUIREMENTS (Con't)

b. The IH will incorporate burning operations into the overall installation industrial hygiene program to include the occupational health hazards inventory. Health education will be provided to employees active in demil operations and who may become exposed to noise, heat, carbon monoxide, eye hazards and systemic poisoning.

5. General Environmental Requirements.

a. All Federal, State and local environmental regulations will be complied with in all PEP demil operations.

b. A current Open Burn Permit will be in force before commencement of any burn operations.

c. All applicable DMWRs, LOIs, and other documentation must be reviewed by the environmental coordinator to ensure there are no conflicts with applicable environmental regulations and permits. All conflicts must be resolved in favor of the environmental permit prior to actual conduct of the burning operation, except when the Commanding Officer authorizes demil in emergency situations.

d. Documentation of the detailed chemical, physical and quantitative characteristics of any PEP must be obtained prior to demil. Residue samples must be tested for appropriate hazardous waste characteristics prior to ultimate disposal.

6. Specific Environmental Requirements.

a. Environmental Coordinator will instruct demil personnel hazardous waste management procedures and contingency plan implementation to assure performance of duties in compliance with Open-Burning Permit and without release of hazardous waste to the environment.

b. Demil personnel must successfully complete classroom instruction that teaches them to perform their duties in a way that ensures the depot's compliance with environmental requirements. Employees who have not completed this training must not work in unsupervised positions. Demil personnel must also take part in an annual review of the initial training.

c. Environmental Coordinators shall inspect burning grounds not less than once per quarter to ensure compliance with Open-Burning Permit, environmental regulations and SOP. All inspections will be followed by a written report to the Commanding Officer identifying deficiencies and corrective action. Copies of inspection reports will be provided by MSC environmental offices and to HQ AMC, ATTN: AMCEN-A, 5001 Eisenhower Ave., Alexandria, VA 22333-0001.

d. Open burning of waste explosives includes waste which has the potential to detonate and bulk military propellants which cannot safely be disposed of through other modes of treatment.

e. Residue from OB operations are still considered to be hazardous waste. Representative samples of ash residuals must be tested for reactivity. If samples are reactive, then the ash residue must be reburned and tested again. Once proven to be nonreactive, the ash residue may be properly disposed of. All residue must be removed from the burning pans and disposed of within 90-days of the date of the generation of the original waste, not the date of the burns or ash generation. For PEP items from the SDPDA or B5A account, the 90-day clock begins when the items are taken from storage and brought to the burning grounds.

f. OB of hexachloroethane (HC), colored smokes, white phosphorous (WP), red phosphorous (RP) and riot control agents (CS and CN) is prohibited. OB of WP and RP will only be allowed for emergency destruction purposes. Such emergencies must be authorized by the Commanding Officer and coordinated with the regional EPA Office.

GENERAL SAFETY REQUIREMENTS (Con't)

ENVIRONMENTAL REQUIREMENTS (Con't)

7. PEP-Contaminated Waste.

a. PEP-Contaminated wastes are not classified as hazardous waste. Packing boxes, packing materials, empty shells, rags and gloves potentially contain only insignificant quantities of PEP.

b. PEP- Contaminated waste must be burned or flashed. Open-Burning of these materials may be conducted. Separate burn pans must be established within the burning ground for hazardous waste and contaminated waste.

c. Residue from the burning of PEP-Contaminated waste must be tested for EP toxicity.

8. Security.

a. All items designated as sensitive and assigned a risk category retain that status until such time as demil has been accomplished.

b. Demil assets will be stored IAW security risk categories in magazines and igloos which have special door locks. The key custodian will issue keys on a signature basis to authorized persons. The two-man rule will apply throughout the operation.

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR: Destruction of Ammunition and Explosives
by burning: various FSCs and DODICs:
various Hazard Classes and Fire Symbols

B. OPERATION NO. 1

C. BAY NO. Burning Grounds

D. SOP NO. FW-0000-II-008 **DATE** 16 Aug 72

E. REV NO. 2 **DATE** 20 Feb 87

F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Receive Items for Burning, Unload and Unpack

H. EXPLOSIVE LIMITS: **UNITS:** As required **EXPLOSIVE LBS:** Limit of 10,000 per burn

I. PERSONNEL LIMITS: **OPERATORS:** Receive - 2
Unpack - 6 **TRANSIENTS:** 3

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Receive items for destruction at Burning Grounds from storage via approved tractor with trailer IAW SOP FW-0000-L-002.	1a. (S) Appropriate fire symbol will be displayed in such a manner as to be easily visible from all roads of approach. 1b. (O) Authority for destruction must be supplied before or with items. 1c. (S) Employees will leave their assigned depot badge with attendant at Bldg 601 just inside Gate 209 and obtain a special demolition badge. Upon leaving the area, special badge will be returned and assigned depot badge will be picked up.
2.	Spot carrier at operational site designated by Burning Grounds Supervisor.	2. (O)(S) Operators will prepare the operational site under the direction of the Area Foreman.
3.	Unload carrier either manually, by use of roller conveyor, or by forklift and position on site designated by supervisor.	3. (O)(S) After unloading operation is completed, forklift operator and truck drivers will retire with vehicles to area outside roadblock.
4.	Unpack items as required.	4a. (S) Personnel in proximity to steel banding operations will wear safety eyewear and face shields. Operators handling metal banding will also wear leather or leather-palmed gloves. 4b. (O) When classified material is being destroyed, it will be accomplished IAW AR 380-5. 4c. (O)(S) Supervisor or designated individual will insure that all roadblocks leading to the burning grounds from the south are blocked off and posted. Immediately prior to burning operation, supervisor or designated individual will secure roadblocks by closing and hooking double gate which completely crosses the road leading to destruction site from the North. 4d. (O)(S) No other person except supervisor or designated individual will be permitted to open or close the roadblocks.

- 4e. (S) Supervisor or designated individual will check telephone at control tower prior to burning operation. If telephone is out of order, immediately contact Attendant at Gate 209 in person. Supervisor will also contact Depot telephone operator so that communications can be restored.
- 4f. (S)(O) Burning grounds will also be serviced by two-way radio communications.

K. SPECIAL REQUIREMENTS:

1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
2. Disposition of generated packing material and components will be as stated for each item processed. All such material will be moved a sufficient distance away from the destruction site to prevent charring or damage during burning operations.
3. Forklift, when not in actual use, will have forks at ground level and have brakes set. Forklift will be provided with overhead guards in accordance with provisions of TM 743-200.
4. When loading or unloading vehicles, engine will be shut off, transmission in gear, hand brake set, wheels chocked, and doors latches open.
5. Free exits from operating sites will be maintained at all times.
6. Personnel and explosives limits will be complied with.
7. The number of personnel assigned to work in the burning grounds will not be less than two at any time.
8. Personnel working with MHE will wear hard hats.

1. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

<u>ITEM</u>	<u>QTY</u>	<u>SPEC/NSN</u>
Carrier	As required	
Fork Lift (Gas)	1	
Safety Goggles/Face Shield	As required	
Leather or Leather-palmed Gloves	As Required	ANSI -Z-871/L-F-36.
Coveralls, Flame Resistant	As Required	JJ-G-451
Fire Symbols	As Required	
Conveyor, Roller	1	
Safety Shoes	As Required	
Hand Tools	As Required	MIL-S-41821
Cutters, Steel Strapping	1	
Hard Hats	As Required	
Colton Undergarments	As Required	5110-00-771-3732

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR:
Destruction of Ammunition and Explosives
by Burning: various FSCs and DODICs:
various Hazard Classes and Fire Symbols

B. OPERATION NO. 2

C. BAY NO. Burning Grounds

D. SOP NO. FW-0000-H-008 **DATE** 16 Aug 72

E. REV NO. 2 **DATE** 20 Feb 87

F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Prepare Explosives and Ammunition for Burning

H. EXPLOSIVE LIMITS: UNITS: As Required **EXPLOSIVE LBS:** Limit of 10,000# per burn

I. PERSONNEL LIMITS: OPERATORS: 11 **TRANSIENTS:** 3

J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Prepare burn pan. Use combustible material such as sawdust or scrap lumber as necessary to facilitate burn.	<p>1a. (O)(S) Combustible material will not be stuffed into the cavity of a projectile to facilitate start of burn.</p> <p>1b. (O)(S) The quantity of any item to be burned will be determined by testing. Testing will start with a small amount of item to be burned, and increased gradually with each successful burn, until the desired quantity is reached, NTE 3" in depth.</p> <p>1c. (O) A bed of combustible material will not be required when burning solid propellant.</p> <p>1d. (O) Solid propellant powder may be used to ignite the explosive filler in projectiles when the filler is to be burned and the metal saved.</p> <p>1e. (O)(S) Munitions to be burned will be examined carefully to make certain that no removeable detonators or blasting caps are included.</p> <p>1f. (O)(S) Before surface burning is accomplished the area must be surveyed to assure that the ground is perfectly smooth, free of loose material, without cracks or crevices, and is packed sufficiently to prevent explosive materials from infiltrating during burning operation.</p>
2.	Prepare pit or trench for burning.	<p>2a. (O)(S) Pits or trenches will be utilized if the possibility of propulsion exists or to limit fragmentation if detonation should occur. Pits or trenches will not be reused within a 24-hour period.</p> <p>2b. (O)(S) Pits or trenches will be four feet deep with sides sloping enough to prevent cave-in.</p>

3. Place items to be burned in pan or pit or trench.

- 2c. (O)(S) Size of pit or length and width of trench will be determined by the quantity of material being disposed of.
- 2d. (O) Place combustible material in bottom of the pit at least one foot deep.
- 3a. (O)(S) Containers will be unpacked a minimum of ten feet from each other and from explosive materials previously laid for destruction, to prevent rapid transmission of fire in the event of premature ignition.
- 3b. (O) Place munitions on combustible material in pit or trench, ensuring that the combustible material extends beyond the layer of munitions.
- 3c. (O)(S) Items will be positioned so that, when burning, the explosives will burn in the direction from which the wind is blowing.

4. Contact Attendant at Gate 209 by radio or in person to assure that all personnel who have entered the area are accounted for and allow no one to enter until further word from the supervisor.

K. SPECIAL REQUIREMENTS:

- 1. Applicable portions of "General Safety Requirements" section will be strictly adhered to.
- 2. Exposed explosives will not be handled by forklift truck.
- 3. Containers of explosives will not be carried directly on the forks of a lift truck without skids or pallets.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

<u>ITEM</u>	<u>QTY</u>	<u>SPEC/NSN</u>
Carrier	As Required	
Forklift (Gas)	1	
Safety Goggles/Face Shield	As Required	
Leather or Leather-palmed Gloves	As Required	ANSI-Z-871/L-F-36
Coveralls, Flame Resistant	As Required	JJ-G-451
Safety Shoes	As Required	
Cotton Undergarments	As Required	MIL-S-41821
Hard Hats	As Required	
Gloves, Rubber	As Required	
Two-way Radio or Telephone	As Required	
Barrel with Water	As Required	
Sawdust	As Required	
Scrap Lumber	As Required	
Excelsior	As Required	
Respirator (Dust)	As Required	
Respirator (Organic vapor)	As Required	

NIOSH TC Approved

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR:
Destruction of Ammunition and Explosives
by Burning; various FSCs and DODICs'
various Hazard Classes and Fire Symbols

B. OPERATION NO. 3

C. BAY NO. Burning Grounds

D. SOP NO. FW-0000-II-008 **DATE** 16 Aug 72

E. REV NO. 2 **DATE** 20 Feb 87

F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Destroy Ammunition and Explosives by Burning

H. EXPLOSIVE LIMITS: UNITS: As Required **EXPLOSIVE LBS:** Limit of 10,000 # per burn

I. PERSONNEL LIMITS: OPERATORS: 4 **TRANSIENTS:** 3

J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Prepare non-electric ignition train.	1a. (O)(S) Ignition train must be arranged so it will burn in the direction from which the wind is blowing.
2.	Prepare a piece of safety fuse for igniting the ignition train.	2a. (O)(S) Safety fuse will be tested as follows: (1) Using a clean, sharp blade or crimpers, cut and discard a six-inch length from free-end of fuse to prevent a misfire caused by exposed powder absorbing moisture from the air. (2) Cut off a three foot length of fuse to check burning rate. (3) Ignite fuse and note the time it takes for fuse to burn. (4) Compute burning rate per foot by dividing time in seconds by length in feet. (5) Cut fuse long enough to permit person to reach a safe distance at determined burning rate per foot, but in no case will the burn time be less than 3 minutes.
3.	Assemble ignition train.	3a. (O) (S) Attach M60 fuse igniter, or equivalent, to one end of fuse as follows: (1) Unscrew fuse holder cap two or three turns. (2) Press shipping plug into igniter to release split collet, and rotate plug as it is removed. (3) Insert end of fuse in place of plug until fuse rests against primer hose. (4) Tighten cap sufficiently to hold fuse in place, thus waterproofing joint. 3b. (O) Split other end of safety fuse and insert into a small plastic bag of smokeless powder (approximately 1 ounce), as required NOTE: Smokeless powder need not be used if not required to accomplish burning.

- 3c. (O) Secure bag to safety fuse with tape.
- 3d. (O) Insert plastic bag of propellant into combustible material
- 3e. (O)(S) All personnel, with the exception of two qualified individuals, will retire from burning site to a safe distance as designated by supervisor prior to ignition. QASAS representative will be present.
- 3f. (O) Two qualified personnel will ignite safety fuse as follows:
 - (1) Remove safety pin.
 - (2) Push plunger all the way in.
 - (3) Turn release ring 1/4 turn and pull.
 - (4) Note time of ignition.
- 4. Retire from burning area.
 - 4a. (O)(S) Personnel will be withdrawn from burning site as follows:
 - (1) Vehicle with driver and motor running will be at site to evacuate personnel.
 - (2) Personnel will withdraw on foot by walking at a normal pace to reach area designated by supervisor.

K. SPECIAL REQUIREMENTS:

- 1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
- 2. Fire Department will be on standby to extinguish grass or brush fires at the discretion of the demolition supervisor.
- 3. Warning device (flag and/or warning light) will be displayed while burning is being accomplished.
- 4. Operators working with exposed explosives will be examined for loose explosives at regular and frequent intervals.
- 5. Supervisor will be aware of physical condition of all crew members.
- 6. Supervisor will maintain a permanent log register of all burning activities. This will include burn area, date, time, item(s) burned, net explosive weight, net and type initiating explosives, total explosive destroyed, applicable remarks and initial.
- 7. Quality Assurance Representative will inspect for explosive contamination, critical defect and will be present during all burning operations, except that operations will not cease due to temporary absence of this representative.
- 8. Supervisor will assure that all personnel are in a safe location and that the area is free of livestock prior to ignition.
- 9. Supervisor will be present during burning activities.
- 10. Initiating material will be kept segregated from items to be destroyed. Quantities of initiating material no greater than what is needed to sustain normal operations for a four hour period will be stored at the operational site.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

<u>ITEM</u>	<u>QTY</u>	<u>SPEC/NSN</u>
Vehicle for Evacuation	1	
Safety Goggles/Face Shield	As Required	ANSI-Z-871/L-F-36
Coveralls, Flame Resistant	As Required	
Cotton Underclothing	As Required	
Safety Shoes	As Required	MIL-S-41821
Leather or Leather-palmed Gloves	As Required	JJ-G-451
Approved Crimpers	1	5120-00-029-0683
Fire Equipment	As Required	
Two-Way Radio or Telephone	As Required	
Warning Flags	As Required	
Earplugs	As Required	
Safety Fuse	As Required	1375-M670
Fuse Igniters	As Required	1375-M766 (or equivalent)
Smokeless Powder	As Required	
Hard Hats with Liner	As Required	

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR:
Destruction of Ammunition and Explosives
by Burning; various FSCs and DODICs:
various Hazard Classes and Fire Symbols

B. OPERATION NO. 4
C. BAY NO. Burning Grounds
D. SOP NO. FW-0000-H-008 **DATE** 16 Aug 72
E. REV NO. 2 **DATE** 20 Feb 87
F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Misfire Procedures

H. EXPLOSIVE LIMITS: UNITS: As Required **EXPLOSIVE LBS:** Limit of 10,000# per burn

I. PERSONNEL LIMITS: OPERATORS: 2 **TRANSIENTS:** 0

J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Misfires will not be investigated until 30 minutes, plus burning time of fuse, have elapsed.	
2.	Misfire procedures.	2a. (O)(S) Investigation and correction will be made by the supervisor /operator who prepared ignition train. 2b. (O)(S) Visually inspect safety fuse, ignition train, and/or items to determine misfire cause.
3.	Prepare ignition train IAW Operation No. 3 and ignite.	

K. SPECIAL REQUIREMENTS:

- Applicable portions of "General Safety Requirements" will be strictly adhered to.
- "Special Requirements" and specific Safety Instructions of Operation No. 3 will be complied with.
- Additional setup will be inspected by a QA Inspector prior to initiation to insure proper set-up.
- All items will be inspected to assure all explosives have been burned. Any suspect or unburned rounds will be re-burned.

L. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

As applicable from Operation No.3

OPERATIONS FORMAT

(Normal Operation)

A. STANDING OPERATING PROCEDURE FOR:
Destruction of Ammunition and Explosives
by Burning; various FSCs and DODICs;
various Hazard Classes and Fire Symbols

B. OPERATION NO. 5

C. BAY NO. Burning Grounds

D. SOP NO. FW-0000-11-008 : **DATE** 16 Aug 72

E. REV NO. 2 : **DATE** 20 Feb 87

F. CHANGE NO. _____ **DATE** _____

G. OPERATION: Clean-up

H. EXPLOSIVE LIMITS: UNITS: N/A **EXPLOSIVE LBS:** N/A

I. PERSONNEL LIMITS: OPERATORS: As required **TRANSIENTS:** 4

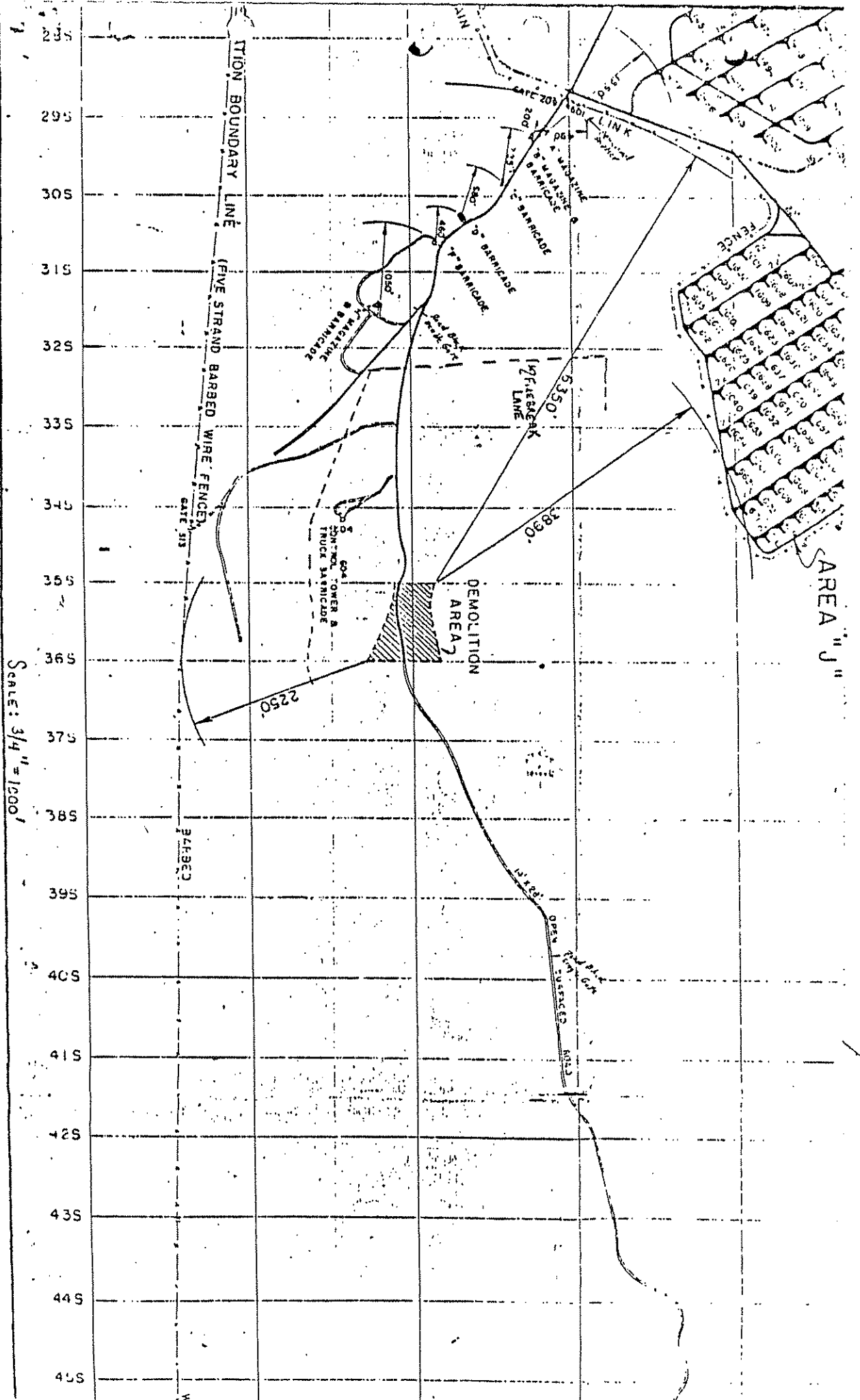
J. _____

STEP NO.	DESCRIPTION	SPECIFIC INSTRUCTION(SAFETY, OPERATIONAL, QUALITY CHARACTERISTICS.)
1.	Police burn site.	1a. (O)(S) Personnel will not enter burn site for at least 12 hours after the fire has burned out. 1b. (O)(S) Two qualified personnel will inspect burn site after 30 minutes have elapsed and, particularly, metal items to insure all explosives have been burned. 1c. (O) All unburned items will be spotted and marked to be reburned.
2.	Clean burn site of all residual.	2a. (O)(S) All residual will be bagged, sealed placed in metal containers and appropriately marked to indicate weight and type. 2b. Transfer containers to storage.
3.	Transfer scrap metal to Property Disposal Officer.	3a. (O)(S)(Q) Scrap metal will be accompanied by a certificate of decontamination, signed by supervisor and verified by Q.A. Inspector. 3b. (O) DA Form 4508 and DD Form 1348-1 will be prepared and authenticated by Chief, Ammunition Mission Division and Surveillance representative for all salvageable materials being transferred to Property Disposal Officer.

- K. SPECIAL REQUIREMENTS:**
1. Applicable portions of "General Safety Requirements" will be strictly adhered to.
 2. Good housekeeping will be maintained.
 3. Ash residuals will be tested for reactivity within 90 days of generation of original waste.
 4. Fire Dept. personnel will inspect burning grounds periodically to ensure all explosives have been burned out and no brush fires have started.

1. EQUIPMENT, TOOLS, GAGES AND SUPPLIES:

<u>ITEMS</u>	<u>QTY</u>	<u>SPEC/NSN</u>
Coveralls, Flame Resistant	As Required	
Cotton Undergarments	As Required	
Heavy Duty Equipment	As Required	
Safety Shoes	As Required	
Metal Containers for residual	As Required	MIL-S-41821
Shovels	As Required	
Plastic Bags	As Required	
Seals for bags	As Required	
Tags for containers	As Required	
Carrier	1	
Leather or Leather-Palmed Gloves	As Required	JJ-G-451



Scale: 3/4" = 1000'

TITON BOUNDARY LINE

(FIVE STRAND BARBED WIRE FENCE)

GATE 313

3475

604
CON-TROL TOWER &
TRUCK BARRICADE

DEMOLITION
AREA

197 FASBARK
LANE

3890

6350

3475

3550

3650

3750

3850

3950

4050

4150

4250

4350

4450

4550

AREA "J"

