TRAINING SUPPORT PACKAGE (TSP)

TSP Number/Title	55B40C04 Conduct Explosive Safety Survey
Task Number(s)/ Title(s)	093-400-4274 Conduct Explosive Safety Survey
Effective Date	21 August 1998
Supersedes TSP(s)	MP-06/C 645-55B40 and MP-07/C 645-55B40
TSP User	USAOMMCS, Redstone Arsenal, Alabama and Accredited Ordnance TASS Battalion
Proponent	US Army Ordnance Missile and Munitions Center and School, Munitions Training Department, Redstone Arsenal, AL 38597-6970
Comments/ Recommen-dations	Send comments and recommendations directly to: US Army CASCOM Training Directorate ATTN: ATCL, AO (Mr. Roy King) Bldg. 1109, 401 First Street Fort Lee, VA. 23801-1713 (e-mail Kingr1@Lee-dns1.army.mil) DSN: 539-1129, Commercial: 804-765-1129
Foreign Disclosure Restrictions	If Allied students are scheduled to attend this class, coordination with the Security Division (ATSK-AS) is required to determine if the information can be released to Allied students.

Preface

Purpose

This training support package provides the instructor with a standardized lesson plan for presenting instruction for:

LESSON TITLE:	Conduct Explosive Safety Survey
CONDITIONS:	In a classroom environment given: Required catalog data DOD Ammunition Consolidated Catalog Ammunition Surveillance Information System (ASIS) AMC Regulation 385-100 DA PAM 385-64 TM 9-1300-206 Map of the Ammunition Support Activity Explosive safety report data Stockage objective Applicable waivers and exemptions A calculator
STANDARDS:	Ensure compliance with all explosive safety standards.

This TSP Contains

TABLE OF CONTENTS

(21 August 1998)

SECTION I. ADMINISTRATIVE DATA

All Courses Including this Lesson

COURSE NUMBER(S)	COURSE TITLE(S)
645-55B40	Ammunition Specialist, ANCOC

Task(s) Taught or Supported

TASK NUMBER	TASK TITLE
093-400-4274	Conduct Explosive Safety Survey

Reinforced Task(s)

TASK NUMBER	TASK TITLE
None	

Academic Hours

The academic hours required to teach this lesson are as follows:

	ADT HOURS/METHOD
Conference	1.0 / CO
Practical Exercise	4.0 / PE2
Total hours	5.0

Test Lesson Number

	Hours	Lesson No.
Testing:	3.0 TE2	55B40C07
Review of test results:	0.1 CO	55B40C08

Prerequisite Lesson(s)

LESSON NUMBER	LESSON TITLE
55B40C01	Ammunition/Explosive Storage Standards
55B40C02	Inspect Munitions Storage Facilities
55B40C03	Plan Munitions Storage Operations

Clearance and Access

Unclassified - If Allied students are scheduled to attend this class, coordination with Security Division (ATSK-AS) is required to determine if the information can be released to Allied students.

References Required.

Number	Title	Date	Additional Information
TM 9-1300-206	Ammunition and Explosives Standards	30 AUG 73	with changes 1-10
AR 385-64	Ammunition and Explosives Safety Standards	22 MAY 87	
AMC Regulation 385-100	Safety Manual	1 AUG 85	
	Ammunition Surveillance Information System (ASIS)		
	DOD Ammunition Consolidated Catalog		

Related

None

Student Study Assignments

None

Instructor Requirements

One instructor

Additional Support Personnel Requirements	None
Equipment Required	Overhead Projector
Materials Required	INSTRUCTOR MATERIALS: References listed above. Viewgraphs 55B40C04, VG#01 - VG#11 STUDENT MATERIALS: References listed above, Practical Exercise Work Sheet 55B40C04-PE2, Map of the Ammunition Support Activity, Explosive Safety Reports, Stockage Objective, Applicable Waivers and Exemptions, and a calculator
Classroom, Training Area, and Range Requirements	One 30-person classroom
Munitions Requirements	None
Instructional Guidance	Before presenting this lesson, instructors must thoroughly prepare by studying this lesson and identified reference material.

Proponent Lesson Plan Approvals

Name	Rank	Position	Date

SECTION II. INTRODUCTION

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.1 hours

Motivator

Good morning/afternoon, class. I am _____. I will be your primary instructor for this lesson. In earlier classes, you learned that some munitions installations are not always in compliance with established explosive safety standards. As an ammunitions specialist, you must be able to detect quantity-distance violations and recommend corrective action. If, on the other hand, corrective action is not feasible and the deviation can be justified (without accepting undue hazards), a request for a waiver must be initiated. This informs higher commands of the situation and asks their approval. You must be able to determine where deviations from Q-D standards exist and make proper recommendations.

Terminal Learning Objective

Note: Inform the students of the following terminal learning objective requirements.

At the completion of this lesson, you (the student) will:

ACTION:	Conduct Explosive Safety Survey
CONDITIONS:	In a classroom environment given: Required catalog data DOD Ammunition Consolidated Catalog Ammunition Surveillance Information System (ASIS) AMC Regulation 385-100 AR 385-64 TM 9-1300-206 Map of the Ammunition Support Activity Explosive safety report data Stockage objective Applicable waivers and exemptions A calculator
STANDARD:	Ensure compliance with all explosive safety standards.

Safety Requirements

None

Risk Assessment Level	Low
Environmental Considerations	None
Evaluation	On a written end of annex examination, the student must score a minimum of 70 percent to achieve a GO.
Note:	**Show VG01 (Title Slide).**
Instructional Lead-in	This class is designed to provide you with the knowledge necessary to conduct explosive safety surveys. First we will discuss waivers of Q-D safety standards.

SECTION III. PRESENTATION

1. Learning Step/Activity 1: Describe waivers of Q-D safety standards. (Reference AR 385-64, and TM 9-1300-206)

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.4 hours
Media: Viewgraphs

Note: **Show VG02 (Purpose of a Waiver).**

a. Purpose of a waiver. The purpose of a waiver is to provide command authorization to deviate from established munitions and explosives quantity-distance safety standards. (Reference TM 9-1300-206, Glossary Page 10).

- A waiver does not reduce or eliminate a hazard.
- It does bring to command attention the explosive safety standard problem.

Note: **Refer students to AR 385-64, chapter 1 and review DOD 6055.9-STD, paragraph B-1 (Scope).**

(1) AR 385-64 sets the standard for Army organizations worldwide. AR 385-64 describes the Army's general safety policies and standards for munitions, explosives, liquid propellants, and related facilities and activities. Specifically, it sets standards for: (Reference AR 385-64, paragraphs 1a and 1b).

- The separation of facilities and activities within the boundaries of Army installations where munitions, explosives, and liquid propellants are located.
- The location of hazardous materials in relation to inhabited buildings, public highways and railways, pier and wharf facilities, and designated airfield areas. In these cases, the standards apply to both inside and outside the installation boundaries.
- The siting of facilities and activities not actually involving munitions, explosives, and liquid propellants but which would be exposed to such hazards if improperly located.

(a) The standards in this regulation apply to installations and activities in CONUS. They also apply to overseas commands involved with munitions, explosives, and liquid propellants except where in conflict with host country-US Forces agreements.

(b) AR 385-64 will serve as the primary guidance for the Army's munitions and explosives safety standards. Detailed procedures for specific munitions operations not found in Appendix A are contained in TM 9-1300-206.

(2) TM 9-1300-206, page 1-2, paragraph 1-5a(1), specifically states that Army-wide mandatory quantity-distance (Q-D) standards for munitions and explosives are found in TM 9-1300-206.

Note: **Check On Student Learning.**

QUESTION: What is the PRIMARY purpose of a waiver?

ANSWER: To provide authorization to deviate from a quantity-distance standard.

Note: Refer students to AR 385-64, page 3, paragraph 5, (Waiver authority), and TM 9-1300-206, page 1-3, paragraph 1-5b (Waiver authority).

Review with students the waiver process that was previously taught in Lesson 55B40C03.

Note: **Show VG03 (Waiver Authority).**

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b. Waiver Authority. The Chief of Staff, US Army (CSA), is the controlling authority for granting waivers of Q-D safety standards for munitions and explosives. This authority is redelegated by TM 9-1300-206 to:

- Commanders of major Army commands (MACOMs) in CONUS.
- Overseas MACOM theater commanders.
- The Chief, National Guard Bureau.

(1) This authority will not be redelegated further.

(2) Commander to whom waiver authority is delegated will:

- Ensure the existence of necessary and compelling reasons before granting waivers to Q-D standards.
- Grant waivers to Q-D standards for installations and activities within their areas of authority.

Note: **Check on Student Learning.**

QUESTION: Who can grant a waiver in an overseas area?

ANSWER: Theater commander.

Note: **Show VG04 (Requests for Waivers).**

Note: Refer students to AR 385-64, page 3, paragraph 6, TM 9-1300-206, page 1-3, paragraph 1-5c, and Student Handout C04-H01. Inform students that the handout is a typical example of a request for a waiver.

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c. Requests for Waivers. Commanders of installations, activities, and other munitions locations will submit requests for waivers through command channels. This will be done when Q-D standards cannot be achieved. When such waivers impact on other commands, initiating activities will coordinate requests with these local commands. Requests for waivers will include copies for intermediate commands. CONUS commanders will coordinate with other affected MACOM commanders before granting waivers. Requests for waivers will contain the following minimum information:

- Description of conditions. This will include maps showing distances to internal and external exposures, location of personnel, facilities exposed, and quantity and type or class of munitions or explosives.
- Safety regulations that will be violated, and reasons.
- Specific time period for the waiver.
- Safety precautions during the period of waiver.
- Development of a waiver plan. This will include milestones, resources, and actions planned to eliminate the need for the waiver.

d. Submission of Waivers. Requests for waivers will be forwarded as shown below:

- Within CONUS, through command channels to the CONUS MACOM commanders.
- Within overseas commands, through command channels to MACOM and theater headquarters.
- Within Army Reserve and National Guard to Chief, National Guard Bureau.

Note: Point out to students that "internal and external exposures" (TARGET SITES) means on and off post, inside and outside the ASP.

Note: **Show VG05 (Time Limitations).**

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e. Time Limitations. Waivers normally will be limited to one year or less; no waiver will be in effect for more than 5 years. A waiver will be considered rescinded on its expiration date. Installation or activity commanders will forward waiver renewal requests in time to permit investigation, evaluation, and reply. Waivers will not be renewed unless all practicable means for corrections have been exhausted.

(1) Waivers granted for more than one year will be reviewed each year by the installation or activity commander. This will ensure that circumstances requiring the waiver have not changed. Results of this review and a progress report regarding milestones that have been completed will be forwarded through command channels to the MACOM commander granting the waiver.

(2) Request for amendments will be initiated when:

- Factors or circumstances provide a basis for a change to the initial request for waiver.
- New conditions arise to affect an existing waiver.

(3) When factors or circumstances prevent a waiver condition from being corrected within five years of an original request, the waiver becomes a candidate for exemption. Exemptions also will be reviewed each year by the installation commander. It will also ensure that a record of this review will be maintained locally.

Note: **Show VG06 (Exemptions).**

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f. Exemptions. Exemptions are relatively long-term exceptions to otherwise mandatory standards. They will be granted only under the following conditions:

- When immediate corrective measures are impractical.
- When impairment of the overall defense posture would result.
- When positive programs for eventual elimination of the exemptions' need are being pursued.

(1) Exemptions can be authorized only by the Secretary or Under Secretary of the Army, or higher authority. Requests for exemptions will be sent to HQDA(DAPE-HRS), Washington DC 20310. Exemption requests must include detailed information on the hazards involved in the operation. A hazard analysis must describe expected casualties and property losses on a worst case basis. Requests for waivers or exemptions within CONUS that cannot be resolved between MACOM commanders will be referred to HQDA (DAPE-HRS), Washington DC 20310, for resolution.

(2) Assistance needed in the determination of requirements and preparation of waiver/exemption submissions should be obtained or otherwise provided by qualified technical personnel (Safety, Ammunition, Quality Assurance Specialist, Ammunition Surveillance) assigned to respective commands or installations. When such expertise is not immediately available, assistance should be requested through channels (reference AR 702-12). All waiver requests will be coordinated with the installation MACOM Safety Director's Office.

(3) Copies of waivers and exemptions will be maintained in the safety offices of installations and MACOMs.

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2. Learning Step/Activity 2: Review hazard classifications.

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.1
Media: Viewgraphs

Note: **Show VG07 (Hazard Classifications).**

Hazard Classifications.

Note: Review hazard classifications with the students as a refresher that was previously taught in Lesson 55B40C01.

Note: Refer students to TM 9-1300-206, Figure 5-2 (Hazard Classification System), page 5-17, and Table 5-0 (Probable Effects of Blast Overpressures), page 5-2. Explain the numerical system 1.1 through 1.4, then refer students to Table 5-21.

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(1) The class and division assigned to munitions reflect the potential hazard and associated hazard of the item but may be influenced by the type of packaging.

Note: Point out to students that 1.2 items are to be considered as Class 1.1 when unpacked (TM 9-1300-206, paragraph 5-3d(1), page 5-3, and paragraph 5-3f(4)(c), page 5-4).

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(2) For locations containing combinations of Hazard Class 1 explosives in more than one division, the minimum separation distance for each division present must be determined. The greater distance determined will be the minimum separation distance. If 1.1 is present, all 1.1, 1.2, and 1.3 items must be treated as 1.1 and added together to compute the 1.1 distance. (TM 9-1300-206, paragraph 5-3g(3)&(4), and AMC 385-100, paragraph 17-7g.)

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3. Learning Step/Activity 3: Review Q-D Distances.

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.1 hours
Media: Viewgraphs

Note: **Show VG08 (Q-D Distances)**

As a refresher for the students, review hazard classifications that were previously taught in Lesson 55B40C01.

Refer students to TM 9-1300-206, paragraphs 5-3b (IHB), 5-3c (PTR), 5-3d (ILD), and 5-3e (MAG).

Distances.

(1) Inhabited building distance (IBD).

(2) Public traffic route distance (PTR).

(3) Intraline distance (ILD).

(4) Magazine distance (MAG).

(5) Miscellaneous buildings (TM 9-1300-206, page 5-5, paragraph 5-3h).

Note: Explain to students that in order to solve a Q-D problem, it must first be determined which of the basic four distances listed above applies. Discuss briefly the definitions in TM 9-1300-206, paragraph 5-3.

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(6) Fragment distance. Not related to how far a fragment will travel, but rather to a range in which one fragment can be expected in every 600 square feet with an energy of 58 foot-pounds or better.

Note: Refer students to TM 9-1300-206, page 5-4, paragraph 5-3f. Discuss fragment distance. Refer students to Table 5-21, pages 5-45 through 5-51, and point out how fragment distances are listed. Refer students to Tables 5-10 ((04) 1.2) through 5-13 ((18) 1.2). Discuss fragment distance application.

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4. Learning Step/Activity 4: Describe the explosive safety survey.

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.2 hours
Media: Viewgraphs

Note: **Show VG09 (Explosive Safety Surveys).**

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a. Explosive Safety Surveys. In order to determine whether a waiver is required, a survey must be conducted of the site, location, installation, or operation.

(1) Explosive safety surveys are conducted by all major commands and submitted to the Department of Defense Explosives Safety Board (DODESB) for review.

(2) DODESB representatives periodically visit all locations of all military service branches worldwide. They conduct explosive safety surveys and recommend corrections, waivers, and exemptions to the controlling authority.

Note: **Show VG10 (Conducting the Explosive Safety Survey).**

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b. Conducting the Explosive Safety Survey.

(1) Draw a map showing all explosive locations (PES) and all limiting factors (target sites).

(2) Compute safe separation distances that are REQUIRED, based on actual explosive types and weights, and types of targets.

(3) Compare what is required to what actually exists.

(a) If what exists is greater than what is required, there is no problem.

(b) If what is required is greater than what exists, there is a problem that must either be corrected immediately or waived while other corrections are made.

(4) If a waiver is needed to cover a period of corrective actions, make that recommendation based on Q-D requirements and existing conditions.

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5. Learning Step/Activity 5: Practical Exercise

Method of instruction: PE2
Instructor-to-student ratio: 1:12
Time of instruction: 4.0 hours
Media: None

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a. Directions to Instructor:

(1) Ensure each student has a copy of the Practical Exercise Worksheet 55B40C04-PE2.

(2) Inform students of directions listed below.

(3) Provide assistance as required.

(4) Critique the exercise upon conclusion.

b. Directions to Students:

(1) The purpose of this practical exercise is for you to demonstrate how well you have retained the material we have covered in this lesson.

(2) Talking between students is not allowed during the practical exercise.

(3) Raise your hand for assistance, if needed.

(4) Using the reference material provided answer the questions and cite the reference where you found the answer.

(5) You have 200 minutes to complete this Practical Exercise.

SECTION IV. SUMMARY

Note: **Show VG11 (Summary).**

Method of instruction: CO
Instructor-to-student ratio: 1:12
Time of instruction: 0.1 hours

Review/ Summarize Lesson

During this class, we have discussed the requirements for conducting explosive safety surveys and conducted a practical exercise to reinforce the instruction. You should now have knowledge on how to correctly conduct explosive safety surveys.

Check on Learning

Determine if students have learned the material presented by:

a. Soliciting student questions and explanations.

b. Asking questions and getting answers from the students.

c. Correcting student misunderstandings.

Transition to Next Lesson

Your next lesson will be Lesson 05C, Inspect Munitions Field Storage Area.

SECTION V. STUDENT EVALUATION

Testing Requirements	Upon completion of Part I of this annex, your performance will be evaluated by a written examination.
Feedback Requirement	a. Schedule and provide feedback on the evaluation and any information to help answer students' questions about the test. b. Provide remedial training as needed.
Note:	Rapid, immediate feedback is essential to effective learning.

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Practical Exercise Work Sheet

(STUDENT NAME) (RANK) (CLASS) (DATE)

1. You have just been assigned to the 42nd Ordnance Company, which operates two ammunition supply points. The commanding officer calls you to his office and informs you that he has just made an inspection of the storage area, and he believes that there are some quantity-distance violations. Your job is to inspect the area and prepare the required information to either solve the problems or to prepare information to submit a request for a waiver.

2. The following conditions prevail at the Athens ASP:

   a. Contingency plan requires that all the munitions currently stored at the Athens ASP must be stored there. Do not consider any external moves in your solutions.

   b. All separate loading 155MM projectiles are palletized.

   c. Magazines numbers 17, 21, 22, 23, 24, 25, 27, 28, 29, and 31 are full and contain 250,000 lbs NEW of Class 1.1 munitions per magazine and, for the purposes of this exercise, should not be considered in any corrective actions except for waivers. (No rewarehousing)

3. Practical Exercise Requirements.

   a. Prepare a description of conditions that warrants corrective action or a waiver by completing the following:

      (1) Determine Q-D hazard classes and divisions.

      (2) Compute required distances to internal and external exposures.

      (4) Determine inhabited building requirements.

      (5) Prepare a list of safety precautions that will be taken during the period of corrective action and/or waiver.

      (6) Prepare a proposal of corrective actions that would bring the storage area up to safety standards.

Note: With an actual proposal, a cost estimate must be submitted. For this exercise, it is not required. Determine safety violations that cannot be corrected and that require a waiver.

b. When considering corrective actions or a waiver, barricades will not be a solution for this exercise. There are no funds available to construct barricades. In addition, outside storage cannot be used.

4. The following amounts and types of munitions are stored in the magazines at the Athens ASP.

MAG#.	ITEM	Q-D & COMP.	GRP.	EXPL WT	IBD Actual	IBD Required
1.	Photoflash Powder, Proj Illuminating			100,000 50,000 150,000	2250'	'
3.	Aluminum powder (ORIG CONT)			210,000	2250'	'
4.	Cutter, reefing line			10,000	2250'	'
6.	105MM Blank			5,000	2250'	'
9.	Cart 105MM HE (Comp B)			150,000	2375'	'
10.	Ammunition 105MM HEAT M341			100,000	2125'	'
11.	Proj HE (Comp B)			150,000	2375'	'
12.	Cartridge, 4.2 inch HE			100,000	1000'	'
13.	Proj HE 155MM (TNT)			150,000	2375'	'
14.	Proj HE 155MM (TNT)			150,000	2375'	'
15.	Proj HE 155MM (TNT)			160,000	2375'	'
16.	Proj HE 155MM (TNT)			150,000	2375'	'

				Actual	Required
18.	105MM WP w/burster	_____	300,000	1400'	_____'
19.	Grenades, Frag.	_____	140,000	2125'	_____'
20.	Ammunition 105MM HEAT M341	_____	100,000	2125'	_____'
26.	Prop Chg 155MM green bag in metal containers, Igniters rkt Motor M12	_____	110,000 10,000 120,000	2100'	_____'
30.	Rocket Heads, HE (Comp B) w/o Motors	_____	128,000	2100'	_____'
37.	Rkt, HE, 2.75 inch w/LAU 3 Launcher, Cartridge, Illuminating	_____ _____	55,000 6,000	2100'	_____'
39.	Igniter, rkt motor M20. Igniter, spot chg	_____ _____	65,000 50,000 115,000	2250'	_____'
50.	Composition C-4	_____	145,000	2375'	_____'
52.	Blasting cap, Ammunition 40MM HEDP M430	_____ _____	5,001 9,000 14,001	2250'	_____'
54.	Fuze, MTSQ M501 w/o booster	_____	3,000	1800'	_____'

MAP SEE HG B407CPE

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SOLUTION SHEET

MAG#.	ITEM	Q-D & COMP. GRP.	EXPL WT	IBD Actual	IBD Required
1.	Photoflash Powder, Proj Illuminating	1.1 G 1.3 G	100,000 50,000 150,000	2250'	2350'
3.	Aluminum powder (ORIG CONT)	1.4 L	210,000	2250'	100'
4.	Cutter, reefing line	1.4 S	10,000	2250'	100'
6.	105MM Blank	1.3 C	5,000	2250'	115'
9.	Cart 105MM HE (Comp B)	(12)1.2 E	150,000	2375'	1200'
10.	Ammunition 105MM HEAT M341	1.1 E	100,000	2125'	1855'
11.	Proj HE (Comp B)	(18)1.1 D	150,000	2375'	2350'
12.	Cartridge, 4.2 inch HE	1.1 E	100,000	1000'	1855'
13.	Proj HE 155MM (TNT)	(18)1.1 D	150,000	2375'	2350'
14.	Proj HE 155MM (TNT)	(18)1.1 D	150,000	2375'	2350'
15.	Proj HE 155MM (TNT)	(18)1.1 D	160,000	2375'	2565'
16.	Proj HE 155MM (TNT)	(18)1.1 D	150,000	2375'	2350'

SOLUTION SHEET

18.	105MM WP w/burster	(12)1.2 H	300,000	1400'	1200'
19.	Grenades, Frag.	(04)1.1 F	140,000	2125'	2350'
20.	Ammunition 105MM HEAT M341	1.1 E	100,000	2125'	1855'
26.	Prop Chg 155MM green bag in metal containers,	1.1 C	110,000 10,000 120,000	2100'	
	Igniters rkt Motor M12	(04)1.2 G			2115'
30.	Rocket Heads, HE (Comp B) w/o Motors	1.1 D	128,000	2100'	2350'
37.	Rkt, HE, 2.75 inch w/LAU 3 Launcher,	(12)1.2 E	55,000	2100'	
	Cartridge, Illuminating	(08)1.2 G	6,000		1200'
39.	Igniter, rkt motor M20.	(04)1.2G	65,000 50,000	2250'	
	Igniter, spot chg	1.1 G	115,000		2115'
50.	Composition C-4	1.1 D	145,000	2375'	2350'
52.	Blasting Cap, Ammunition 40MM HEDP M430	1.1 B	5,001 9,000	2250'	
		(04)1.1 E	14,001		1250'
54.	Fuze, MTSQ M501 w/o booster	1.4 B	3,000	1800'	100'

STUDENT HANDOUT
CONDUCT EXPLOSIVE SAFETY SURVEY

AMCAD-SE (14 Mar 93) 9th Ind 16 Apr 93

SUBJECT: Request for Waiver

HQ, U.S. Army Material Command, Washington, D.C. 20315

TO: Commanding General, U.S. Continental Army Command
ATTN: ATLOG-S/AM, Fort Monroe, Virginia 23351

1. The material submitted by Fort Carson has been reviewed, and a waiver is granted subject to the following:

   a. All Class 1.1 rocket motors (M-66 type) must be moved from the Butts Road Ammunition Storage Area to Pad 13 at the Wilderness Storage Area.

   b. All safety precautions now in effect at the Butts Road Ammunition Storage Area would remain in effect. Only Class 1.4 and 1.3 explosives may be stored in the Butts Road Ammunition Storage Area.

   c. This waiver does not cover any regulation violations at the Wilderness Storage Area incurred by the re-warehousing of the rocket motors.

2. Waiver Number Fort Carson W-2-93 is assigned and will expire on 30 April 1994.

FOR THE COMMANDER:

3 Encl
wd 1 cy

WALTER G. QUEEN
Acting Chief/Safety Division
Administrative Office

Lt. Lavis

Mr. Blackburn

HEADQUARTERS
5TH INFANTRY DIVISION (MECHANIZED)
FORT CARSON, COLORADO 80913

ALCIS

SUBJECT: Request for Waiver 14 March 1993

THRU: Commanding General
Fifth United States Army
ATTN: ALFGD-SF
Fort Sheridan, Illinois 60037

Commanding General
United States Continental Army Command
ATTN: ATLOG-S-AM
Fort Monroe, Virginia 23351

TO: Commanding General
U.S. Army Material Command
Washington, D.C. 20315

1. References:

   a. TM 9-1300-206
   b. AR 385-64

2. Quantity-distance violations involving the storage of munitions exist at the Butts Road Ammunition Storage Area in Fort Carson, Colorado. Storage facilities in this area consist of two earth-covered, 26 feet by 6l feet, six inches, igloo-type magazines (Dwg No. 33-15-19) and one above-ground magazine (see enclosure no. 1). Warhead Sections, 762 mm Rocket, Practice, XM3BEl, are stored in one earth-covered magazine, Magazine No. 9245, and Rocket Motors, 762 mm M3AlC and M66, are stored in the other earth covered magazine, Magazine No. 9246. Groups B and D Chemical Munitions and small arms munitions are stored in the above ground magazine, Magazine No. 9256. In addition, approximately 180 conex containing unit basic load small arms munitions are located in the Butts Road Ammunition Storage Area. All exposed facilities, distances, and classes of munitions involved are shown on enclosed drawings.

3. Past experience indicates that there will never be more than twelve 762 mm warhead sections and rocket motors in stock at any time. Twelve allowances of 762 mm rocket components required for FY 93 have been received. Five sets of components are presently in stock, and seven sets have been issued to using units.

4. Normally four of the twelve 762 mm rocket motors are M66 type motors, classified as Q-D Class 1.1 munitions and containing a total explosive weight of 7,388 lbs. The remaining eight (8) motors are normally M3 series type motors, classified as Q-D Class 1.3 munitions and containing a total explosive weight of 16,544 lbs. At the present time, two of the motors stored at Magazine No. 9245 are M66 type motors, classified as Q-D Class 1.1 munitions and containing a total explosive weight of 3,694 lbs. The remaining three motors presently stored at Magazine No. 9245 are M3AlC motors, classified as Q-D Class 1.3 munitions and containing a total explosive weight of 6,204 lbs.

5. The Group B and D chemical munitions stored at Magazine No. 9256 include 2,410 lbs explosive weight of Q-D Class 1.3 munitions (Grenades, Hand, Smoke, HC, AN-M8) and 2,088 lbs explosive weight of Q-D Class (12) 1.2 munitions (Grenades, Hand, CS1, ABC-M25A2, Riot Control Type).

6. The following quantity-distance violations exist:

a. Munitions and Explosives Prohibited Area:

All ammunition storage sites in the Butts Road Ammunition Storage Area are located within the munitions and explosives prohibited area of Butts Army Airfield.

b. Public Highway Distances:

(1) Butts Road, located adjacent to the eastern boundary fence of Butts Road Ammunition Storage Area, is the main road used for travel to and from Butts Airfield, the Fort Carson golf course, and most of the Fort Carson firing ranges and training areas. A tank trail, located adjacent to the west boundary fence is used by convoys of both track and wheel type vehicles for travel to and from the Fort Carson firing ranges and training areas.

(2) At the present time, a combined explosive weight of 9,898 lbs of Q-D Classes 1.3 and 1.1 munitions is stored in Magazine No. 9245 and requires separation from public highways by a minimum barricaded distance of 520 feet. A maximum combined explosive weight of 23,932 lbs of Q-D Classes 1.3 and 1.1 munitions can be expected to be stored in Magazine No. 9245 and will require separation from public highways by a minimum barricaded distance of 100 feet. Actual distance from Magazine No. 9245 to Butts Road is 394 feet, barricaded. Actual distance from Magazine Mo. 9245 to the tank trail is 343 feet, barricaded (See enclosures).

(3) Q-D Class 1.2 munitions (Grenades, Hand, CS1, ABC M25A2, Riot Control Type) is stored in Magazine No. 9256 and requires separation from public highways by a minimum distance of 1,200 feet in accordance with paragraph 21f and Table IX of reference a. Actual distance from Magazine No. 9256 to Butts Road is 325 feet. Actual distance from Magazine No. 9256 to tank trail is 284 feet. (See enclosures.)

c. Distance to firing ranges and target detection ranges.

(1) The Q-D Classes 1.3 and 1.1 munitions stored at Magazine No. 9245 and the Q-D Class 1.2 munitions stored at Magazine No. 9256 are located less than inhabited building distance from small arms firing ranges and target detection ranges in violation of paragraph 4a, reference b. The small arms firing ranges are located on the east side of Butts Road (see Enclosure No. 3), and all firing is conducted in an eastern direction. The target detection ranges are located on the west side of Butts Road to the north and south of the ammunition storage area (see Enclosure No. 3) and are used for training with small arms blank munitions. The ranges are used on an average of three days per week, eight to ten hours per day by approximately 100 to 150 persons.

(2) At the present time, a NEW of 9,898 lbs of Q-D Classes 1.3 and 1.1 munitions is stored in Magazine No. 9245 and requires separation from ranges by a barricaded distance of 865 feet and unbarricaded distance of 1,730 feet in accordance with para 21h and Table XI, reference a. A maximum combined NEW of 23,932 lbs of Q-D Classes 1.3 and 1.1 munitions can be expected to be stored in Magazine No. 9256 and will require separation from ranges by a barricaded distance of 1,170 feet or unbarricaded distance of 2,110 feet in accordance with paragraph 21h and Table XI, reference a. Actual distances from Magazine No. 9245 to affected ranges are listed below:

(a) Target Detection Range #48: 897 feet barricaded.

(b) Small Arms Firing Range #49: 1,105 feet barricaded.

SUBJECT: Request for Waiver

(c) Target Detection Range #50: 1,010 feet barricaded.

(d) Small Arms Firing Range #51: 454 feet barricaded.

(e) Target Detection Range #52: 1,099 feet unbarricaded.

(f) Target Detection Range #54: l,824 feet unbarricaded.

(g) Small Arms Firing Range #55: 1,593 unbarricaded.

(3) Q-D Class 1.2 munitions (Grenades, Hand CS1, ABC M25A2, Riot Control Type) are stored in Magazine No. 9265 and requires separation from ranges by a minimum distance of 1,200 feet in accordance with paragraph 21f and Table IX. reference a. Actual distances from Magazine No. 9256 to affected ranges are listed below:

(a) Small Arms Firing Range #51: 385 feet.

(b) Target Detection Range #52: 768 feet.

d. Distances Between Magazines:

(1) The unbarricaded door ends of (Igloo) Magazine No. 9244 containing Q-D Class 1.3 munitions (762 mm practice warhead Sections) and (Igloo) Magazine No. 9245 containing Q-D Classes 1.3 and 1.1 munitions (762 mm rocket motors) are facing toward (above ground) Magazine No. 9256 containing Q-D Class 1.2 munitions (Grenades, Hand, CS1, ABC M25A2, Riot Control Type). (See Enclosure No. 1.)

(2) The two igloo magazines (Magazines Nos. 9244 and 9245) must be separated from the above-ground magazine (Magazine N0. 9256) by a minimum distance of 1,200 feet (missile distance for Q-D Class 1.2 munitions) in accordance with paragraphs 16d and 21f and Table IX, reference a.

(3)Actual distance from Magazine No. 9244 to Magazine No. 9256 is 662 feet. Actual distance from Maga

7. Compliance with mandatory safety requirements cannot be effected locally because of the following reasons:

   a. Munitions are stored at Butts Ammunition Storage Area due to the largest magazine storage space at Wilderness and Titus Ammunition Storage Areas. The causes of all of the violations other than the violation listed in above paragraph 6a are the 762 mm rocket motors and ABC M25A2 CS1 riot control type hand grenades.

   b. The only other available magazines that could possibly be used for storage of 762 mm rocket motors are ten 80-foot standard type igloo magazines located at Wilderness Ammunition Storage Area. By using one of these magazines for storage of twelve 762 mm rocket motors, a lot of much needed storage space would be wasted. This would result in additional outdoor storage of munitions and increased Q-D violations at Wilderness Ammunition Storage Area. In addition, an electric forklift capable of handling the 762 mm rocket motors is not available and is not authorized by present TD allowances. Magazine Nos. 9244 and 9245 are the only available magazines equipped with overhead hoists and are, therefore, the only magazines suitable for handling 762 mm rocket motors and practice warhead sections.

   c. The ABC M25A2 CS1 Riot Control Type Hand Grenades stored at Magazine No. 9256 are part of the munitions required by an operation plan. These munitions must be stacked and earmarked together at the same location to allow using units to draw and distribute the munitions and move out in a very limited time frame. Because of its configuration and size, Magazine No. 9256 is the only suitable magazine available for storage of the munitions required for the operation plan. Consideration has also been given to the fact that the 1,200 feet inhabited building distance requirements for M25A2 grenades appear to be rather excessive and unnecessary. It is doubtful that missiles could be expected to travel a distance of 1,200 feet if the M25A2 grenades were accidentally initiated.

8. In order to eliminate all of the above-listed quantity-distance violations, all of the munitions stored at Butts Ammunition Storage Area will have to be moved to another area. Construction of four new standard igloo type magazines at Wilderness Ammunition Storage Area has been approved and is expected to be completed within 12 months. However, it is planned to use these magazines for

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SUBJECT: Request for Waiver

storage of munitions now stored on outdoor storage pads, thus eliminating Q-D violations currently existing at Wilderness Ammunition Storage Area. The following steps are being taken to eliminate the conditions necessitating the request for waiver at Butts Ammunition Storage Area:

a. Efforts are being made to construct new buildings near Wilderness Ammunition Storage Area for storage of the basic load small arms munitions now stored in Conex boxes at Butts Ammunition Storage Area.

b. A request for three additional new standard igloo type magazines is being submitted for inclusion in future MCA programs. These magazines will be used for storage of all of the munitions presently stored in the three Butts Ammunition Storage Area magazines.

9. The following precautionary measures are being taken to achieve a maximum degree of safety in operations:

a. The standing operating procedure for Butts Airfield Tower Operations contains instructions for pilots not to fly over the ammunition storage area at an altitude of less than 6,300 feet MSL (500 feet distance above the storage area).

b. All general instructions of Magazines Placard (DA Label 85) are being strictly enforced.

c. Fire breaks are maintained, and vegetation is controlled within the ammunition storage area.

d. Special orders for the guards include instructions for protecting explosives and munitions against fires.

e. A telephone for reporting fires to the main post fire station is installed in the guard shelter at the entrance of the ammunition storage area.

10. In accordance with reference c, it is requested that waivers for the quantity-distance violations listed in above paragraph to be granted for a period of one year.

FOR THE COMMANDER:

3 Encl
es (in quad)

ALFGD-SF (16 Apr 93) lst Ind Mr. Howlett/lkl/2267
SUBJECT: Request for Waiver

HEADQUARTERS FIFTH UNITED STATES ARMY,
Fort Sheridan, Illinois 60037 9 May 1993

TO: Commanding General, U.S. Continental Army Command, Fort Monroe,
Virginia 23351

1. Recommend approval of request for waiver.

2. The storage described in paragraph 5 basic letter is due to need for palletized OPLAN-563 load to meet 6-hour unit preparedness requirements. Elimination of this storage is expected prior to 31 October 1993.

FOR THE COMMANDER:

3 Encl
NC

EDWIN F. MILLER
MAJ. AGC
Asst Adjutant General

ATLOG-S/AM (16 Apr 93) 2d Ind
SUBJECT: Request for Waiver

Headquarters, United States Continental Army Command, Fort Monroe, Virginia 23351 24 May 1993

To: Commanding General, United States Army Materiel Command, Bldg T-7, Gravelly Point, Washington, DC 20315

Recommend approval of request for waiver indicated in basic letter.

FOR THE COMMANDER:

3 Encl
nc

D.A. FOLKERSON
Major, AGC
Asst AG

AMCAD-SE (16 Apr 93) 3rd Ind
SUBJECT: Request for Waiver

HQ. U.S. Army Materiel Command, Washington, D.C. 20315 14 Jun 1993

TO: Commanding General, U.S. Continental Army Command,
ATTN: ATLOG-S/AM, Fort Monroe, Virginia 23351

1. The material submitted by Ft. Carson in support of their waiver request needs some clarification in order to ensure an adequate review. The following areas need clarification:

   a. What is the status of Butts Road and Tank Track which make them public highways? A public highway is any street, alley, road, or navigable water open to the use of the general public (TM 9-1300-206, Glossary 8). Unless the public has unlimited access to these roads, they are not public highways.

   b. The layouts of the landing strips on sheet No. P.E.R.-2461 and sheet No. 18-04-03 do not coincide. This will have to be straightened out to give the whole picture as to strip locations and restricted areas in relation to the storage area.

   c. Additional information is necessary as to usage of the airfield. Is the airfield used strictly by DoD aircraft, or do commercial or private aircraft use it also? What is the average traffic at the field i.e., number of landings and take-offs per average day for DOD and non-DOD components?

   d. In paragraph 6b(3) of the basic letter, reference is made to the M25A2 grenade as a Class 1.2 munition. Reference is made to CONARC letter, ATLOC-S/AM, 23 May 1968, subject: Reclassification of Riot Control Type Grenades. This letter states that for Quantity-Distance Storage purposes, CS Hand Grenades are Class 1.4, pending publication of a change in TM 9-1300-206. This change in classification will have a definite bearing on the waiver request.

   e. What is the status of the 180 Conex containers mentioned in paragraph 2 of the basic request? These containers are not shown on any charts, and no quantities are stated for the contents of these containers. What is the relation of the basic loads stored at Butts Road Storage Area to the basic loads (15000 lbs. of Q-D Classes 1.4, 1.3, (04)1.2, (08)1.2, (12)1.2, and 1.1) stored on pad 13 at Wilderness Storage Area (ref. para 7, ALCIS, subject: Request for Waiver, 23 Mar 1993)?

AMCAD-SE (16 Apr 93)
SUBJECT: Request for Waiver

f. It is recommended that all of the Class 1.1 material that is presently stored within the confines of the Butts Road Ammunition Storage Area be moved to a place where adequate distances and conditions exist. The main reason for this is the inherent hazard of Class 1.1 explosives and the jeopardy placed on aircraft utilizing the landing strips. It is also recommended that this be accomplished at the earliest possible time due to the hazards involved.

2. For the above stated reasons the request has been returned for a re-evaluation and a re-submission.

FOR THE COMMANDER:

3 Encl
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G. L. FEAZELL
Chief, Safety Division
Administrative Office

ALCIS (16 Apr 93) 6th Ind
SUBJECT: Request for Waiver

DA, HEADQUARTERS 5th INFANTRY DIVISION (MECHANIZED).
Fort Carson. Colorado 80913 22 Jul 1993

TO: Commanding General, Fifth United States Army,
ATTN: ALFGD-SF Fort Sheridan, Illinois 60037

1. Information request in 3d Endorsement to basic letter in hereby submitted.

2. Butts Road and tank trail were considered in the basic letter as public highways. Vehicles are authorized to travel on any Fort Carson roads and have unlimited access to these roads. Hundreds of persons not connected with munitions operations at Butts Ammunition Storage Area travel daily over Butts Road and have access to the tank trail. The tank trail is being relocated approx 750 feet west of its present location. The public highway distance violation of the tank trail will be eliminated after the new tank trail is completed. Estimated completion date is 15 Oct 93.

3. The layout of the landing strip on sheet No. P.E.R. 2461, was in error, and has been corrected. (See Enclosure No. 3)

4. The only DOD aircraft used at Butts Airfield are aircraft belonging to the Fort Carson, Ent Air Base, Air Academy flying clubs, and civilian aircraft under Army contract. DOD aircraft average 1,000 landings and take offs during the average day. Non-DOD aircraft average 100 landings and take offs during the average day.

5. As a result of CONAFC letter, ATLOG-S/AM, 23 May 93, subject: Classification of Riot Control Type Grenades, status of M25A2 grenade storage at Magazine No. 9256 has changed. Paragraphs 6 b (3), 6c(3), and 6d and 7c are all references to M25A2 grenades in basic letter, should be deleted. At the present time, 1,000 pound explosive weight of Q-D Classes 1,4 and 1.3 munitions (smoke and riot control hand grenades and 40 mm cartridges and small arms munitions) are stored at Magazine No. 9256.

6. Basic load small arms munitions, containing zero pounds explosive weight of Q-D Class 1.4 munitions, is stored in the 180 Conex boxes. This munitions has been issued to Fort Carson using units assigned to STRAF and contingency plans. The charts have been revised to show the locations of the Conex boxes. (See Enclosures 1 and 3) The munitions reported, (Reference letter dated 28 Mar 93, ALCIS, Subject: Request for Waiver) to be stored at Pad No. 13, Wilderness Ammunition Storage Area, was for OPLAN 581. There is no longer a requirement at Fort Carson for storing the OPLAN 581 munitions, and these munitions have been removed, thru, eliminating quantity distance violations at Pad No. 13.

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SUBJECT: Request for Waiver

7. Reasons for storing Q-D Class 1.1 munitions (M66, 762mm Rocket Motors) at Butts Ammunition Storage Area are explained in paragraph 7, basic letter. The only other site presently available at Fort Carson for the storage of M66, 762mm Rocket Motors, is Pad No. 13 at the Wilderness Ammunition Storage Area. Quantity distance violations at Wilderness Storage Area would be increased and could not be eliminated in the foreseeable future if Pad No. 13 is used for storage of M66, 762mm Rocket Motors.

FOR THE COMMANDER:

3 Encl
us

JAMES J. LAWLESS
1LT, AGC
Assistant Adjutant General