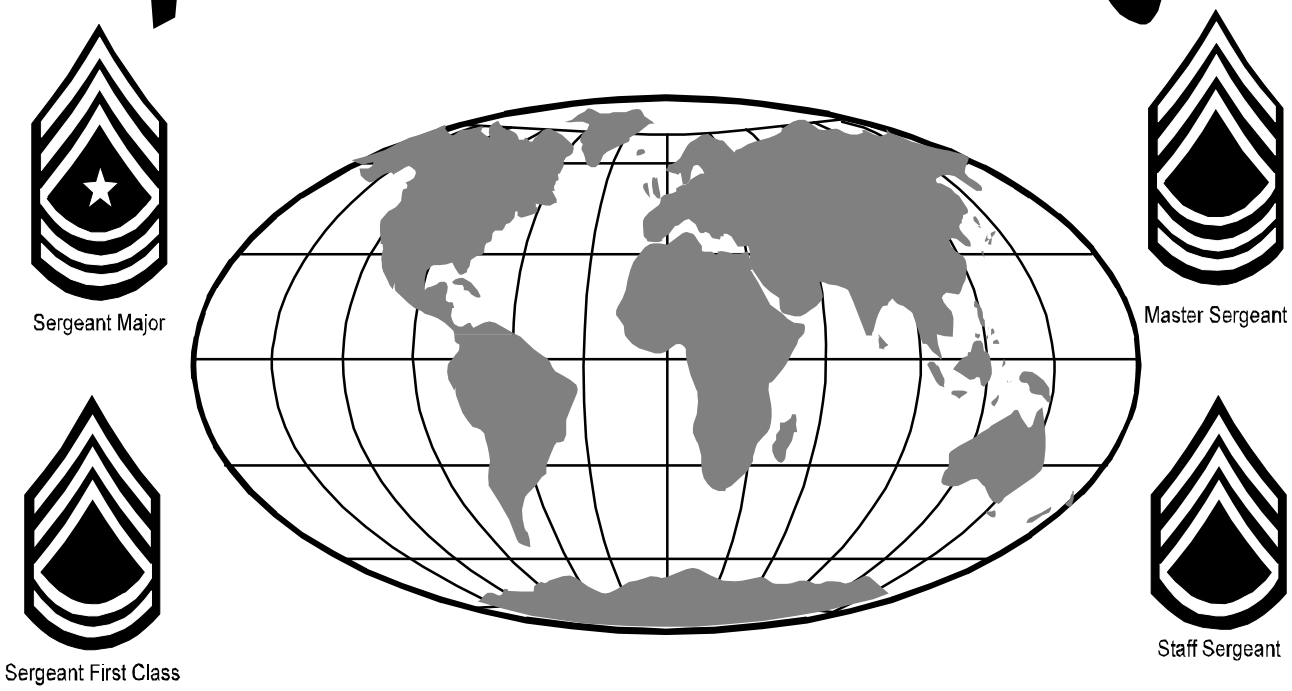
U.S. ARMY SERGEANTS MAJOR ACADEMY (BSNCOC)

W111 **JUN 99**

NBC OPERATIONS

PRERESIDENT TRAINING SUPPORT PACKAGE

WAR FIGHTERS



OF THE 21ST CENTURY

PRERESIDENT TRAINING SUPPORT PACKAGE

TSP Number/ Title	W111 NBC Operations
Effective Date	JUN 99
Supersedes TSPs	This supersedes Preresident Training Support Package W111-RC, May 96, Training Support Package, W111, NOV 93, and Preresident Training Support Package W111, Nov 98.
TSP User	The following course(s) use(s) this TSP: Battle Staff NCO Course
Proponent	The proponent for this TSP is the U.S. Army Sergeants Major Academy.
Comments and Recommenda-tions	Send comments and recommendations on DA Form 2028 (Recommended Changes to Publications and Blank Forms) directly to: ATTN ATSS DCR CMDT USASMA BLDG 11291 BIGGS FLD FORT BLISS TX 79918-8002
Foreign Disclosure Restrictions	The lesson developer in coordination with the USASMA foreign disclosure authority has reviewed this lesson. This lesson is releasable to foreign military students from all requesting foreign countries without restrictions.

This TSP Contains

The following table lists the material included in this TSP.

Gender Disclaimer

Unless this publication states otherwise, the masculine nouns and pronouns do not refers exclusively to men.

SECTION I ADMINISTRATIVE DATA

Task(s) Trained

This lesson trains the task listed in the following table():

Task Number:	None.
Task Title:	Advise the commander and staff on NBC operations
Conditions:	As a Battle Staff NCO of a simulated Battalion/Brigade staff.
Standards:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Task(s) Reinforced

This lesson reinforces the task(s) listed in the following table:

Task Number	Task Title
031-510-4000	Plan NBC operations.
031-510-4001	Conduct NBC operations.
031-503-3005	Prepare and submit NBC 1 reports.
031-503-2004	Prepare and submit NBC 4 reports.

Prerequisite Lessons

None

Clearance and Access

There is no security clearance or access requirement for this lesson.

Copyright Statement

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References

The following table lists the reference(s) for this lesson:

Number	Title	Date	Para No.	Additional Information
FM 3-100	Chemical Operations Principles and Fundamentals	May 96	NA	NA
FM 34-3	Intelligence Analysis	Mar 90	NA	NA

Equipment Required	None
Materials Required	None
Safety Requirements	None
Risk Assessment Level	Low
Environmental Considerations	None
Lesson Approval	The following individuals have reviewed and approved this lesson for publication and incorporation into the Battle Staff NCO Course.

Name/Signature	Rank	Title	Date Signed
Johnnie S. Dills	GS9	Training Specialist, BSNCOC	20 October 1999
William D. Adams	SGM	Chief Instructor, BSNCOC	20 October 1999
Alan R. Tucker	SGM	Course Chief, BSNCOC	20 October 1999

SECTION II INTRODUCTION

Terminal Learning Objective

At the completion of this lesson, you will—

Action:	Advise the commander and staff on NBC operations.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Evaluation

Prior to being enrolled into Phase II of the Battle Staff Course you must take a Phase I Exam that includes questions on material from this lesson. You must correctly answer 70% of the multiple choice questions to receive a "GO" on the Phase I exam. A "GO" is required for enrollment into Phase II.

Instructional Lead-in

The overriding mission of U.S. armed forces is to deter war. Should deterrence fail, the United States will prosecute that war to a successful conclusion. Should the enemy use NBC weapons, U.S. armed forces will respond with military operations which may include nuclear and retaliatory chemical warfare. The goal of these operations is to force the enemy to cease NBC warfare.

SECTION III PRESENTATION

ELO 1

Action:	Recognize the United States' policy on the use of NBC weapons.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 1, U.S. Policy on NBC Weapons

The U.S. policy on the use of NBC weapons during armed conflict is as follows:

- First use of nuclear weapons, if necessary.
- Never use biological weapons.
- Never use chemical weapons.
- Use herbicides under specific conditions.
- Use riot control agents under specific conditions.

U.S. National Security Policy

The U.S. national security policy is to seek a reliable, verifiable ban on the production, stockpiling, and use of NBC weapons. In the absence of such a ban, the United States deters adversaries from developing or using NBC weapons through a balance of information activities and political, economic, and military measures.

U.S. Military Policy

U.S. military policy is to deter enemy NBC use through a strong nuclear force, a viable chemical retaliatory capability, and an NBC defense posture that allows U.S. forces to survive, fight, and win under NBC conditions.

Nuclear Weapons

The United States may use nuclear weapons to terminate a conflict or war at the lowest acceptable level of hostilities. This means we may use nuclear weapons first. Other nations cannot attack us with conventional weapons without risking nuclear war. When faced with a numerically superior enemy, we reserve the right to use nuclear weapons against it. U.S. policy requires a presidential release before using nuclear weapons.

LS/A 1, ELO 1, Biological Agents	The United States will never use biological agents. An enemy attack using biological agents or toxins against U.S. or allied forces allows us the option of responding to such an attack with— • Conventional weapons. • Nuclear weapons.
Chemical Weapons	The United States will never use chemical weapons in retaliation for the enemy's use of chemical or biological agents.
Herbicides	The United States does not consider herbicides as chemical weapons. However, we have adopted policies for their use during war. The U.S. has renounced first use of herbicides in war except for control of vegetation within U.S. bases and installations or around their immediate perimeters. The president must approve the use of herbicides in war.
Riot Control Agents	The United States has also renounced first use of riot control agents (RCAs) in war except in defensive military modes to save lives. Some exceptions include: • Riot control situations in areas under direct and distinct U.S. military control, including the control of rioting prisoners of war. • Use in situations in which civilians are to mask or screen attacks and to reduce or avoid civilian casualties. • Rescue missions in remote or isolated areas, such as recovering downed aircrews and passengers and rescuing escaping prisoners of war. • Rear-echelon areas outside the zone of immediate combat to protect convoys from civil disturbances, terrorists, and paramilitary operations. • Security operations regarding the protection or recovery of nuclear weapons.

LS/A 1, ELO 1, Maintaining an Advantage

U.S. forces will survive and win under NBC conditions through the use of established doctrinal principles. By being better prepared than the enemy for continuous operations under NBC conditions, we will maintain an advantage over the enemy. This advantage will deter the aggressor from using NBC weapons. If the enemy does use NBC weapons, our advantage will force him to quickly cease use or to continue the conflict at a disadvantage.

LS/A 2, ELO 1, Lesson Exercise 1

Click here to go to Lesson Exercise 1.

ELO 2

Action:	Explain the duties of a chemical officer and NCO.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 2, Introduction

Battle management under NBC conditions consists of actions that provide U.S. forces with operational and tactical advantage over their adversaries. Battle management requires direct involvement of the chemical leader or staff officer to implement the chemical plan into the commander's concept of the operation.

LS/A 1, ELO 2, Chemical Officer and NCO	Mission accomplishment under NBC conditions requires "near-real time" collection and dissemination of NBC information. The unit's authorized chemical officer and NCO will facilitate operations under NBC conditions. The chemical officer's and NCO's staff responsibilities are to — • Assist the commander in providing policy and guidance to lower echelons in all matters pertaining to the development of an NBC defense capability. • Monitor NBC defense training within the command. • Evaluate the capability of lower echelons to survive NBC attack and to continue operations in an NBC environment. • Keep abreast of new concept and techniques in NBC defense. • In time of war, act in the capacity as an adviser to the commander on all matters pertaining to NBC defense of subordinate units/formations. In addition, augmented as necessary, the chemical officer and NCO are responsible for NBC data collection, analysis, and reporting. • Where appropriate, operate and maintain calculators and computers and possess basic knowledge of the structure of programs used in NBC warning and reporting.
Battlefield Assessment	Before the battle, commanders give their concept of operations to their coordinating staff officers. The chemical staff officer or NCO works closely with the coordinating staff as they prepare staff estimates based on the commander's guidance. Commanders and their staffs continually plan and improve the current and future phases of the battle with the first published operation order (OPORD) and as the battle progress. The chemical advisor coordinates with the staff officers on NBC defense, smoke, and flame issues.
LS/A 2, ELO 2, Lesson Exercise 2	Click here to go to Lesson Exercise 2.

ELO 3

Action:	Explain the six standard NBC report formats used in the NBC warning and reporting system (NBCWRS) and the process for reporting that data.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96 and FM 34-3 Intelligence Analysis, March 90.

Learning Step/ Activity (LS/A) 1, ELO 3, NBC Warning and Reporting System

An integral part of battle management is an NBC warning and reporting system (NBCWRS). This system provides commanders information on NBC hazards that could profoundly affect their concept of operations. Units use NBCWRS to rapidly transmit a report of an NBC attack to higher, subordinate, and adjacent headquarters. The NBCWRS informs these headquarters of predicted and actual contamination within their area of operations.

NBC Reports

The availability of NBC information and who is available to collect it determines which NBC report format we would use. Each report has a specific purpose and uses standard codes to shorten and simplify the reporting process. The NBC report formats are as follows:

- NBC-1 Observers' Initial Report.
- NBC-2 Evaluated Data Report.
- NBC-3 Warning of Predicted Contamination Report.
- NBC-4 Monitoring and Survey Report.
- NBC-5 Actual Contaminated Areas Report.
- NBC-6 Detailed Information on Chemical/Biological Attack Report.

NBC-1 Reports

The observing unit uses an NBC-1, Observers' Initial Report to give initial and subsequent data of an enemy chemical, biological, or nuclear attack.

NBC-2 Reports

The NBC-2, Evaluated Data Report, passes data based on two or more NBC-1 reports. NBC-2 reports include the attack time, location, and, in the case of a nuclear detonation, an evaluated yield.

LS/A 1, ELO 3, NBC-3 Reports	The NBC-3, Warning of Predicted Contamination Report, provides immediate warning of expected NBC contamination or hazardous areas. Submit the report with an IMMEDIATE message precedence.
NBC-4 Reports	The NBC-4, Monitoring and Survey Report, use an IMMEDIATE message precedence to pass radiation dose-rate measurements.
NBC-5 Reports	The NBC-5, Actual Contaminated Areas Report, identifies the area of contamination or hazard and passes data using an IMMEDIATE message priority. The usefulness of the NBC-5 report increase when sent as a map trace or overlay (if time and distance permit).
NBC-6 Reports	The NBC-6, Monitoring and Survey Report, passes a narrative description of chemical and biological attacks that have occurred in a unit's area of operations. Battalion level and higher creates NBC-6 reports. The NBC-6 will contain as much information as is known about the attacks. Submit only when requested and in hard copy form.
Reporting NBC Data	The process of reporting NBC data involves units at every echelon. These units must establish controls on handling NBC information. Without such controls too much raw data may flood the communications system. Uncontrolled NBC message traffic may overload communications and disrupt tactical operations.
Information Collection	The information you collect and its accuracy effect the NBCWRS. Information requiring immediate management can be without detail, such as the first report by an observer of an NBC attack. Information obtained by monitoring, surveying, and reconnoitering contains more detail; it provides location, type, and strength (radiation) of the hazard.

LS/A 1, ELO 3, Information Evaluation

Battlefield intelligence contains evaluated and collected NBC data. The division Nuclear, Biological, and Chemical Center (NBCC) is the primary evaluation center. Units and intermediate headquarters use raw data to do quick, simplified evaluations. These results are valid until the detailed evaluations arrive from the NBCC.

Critical NBC reports (observers' initial report) usually flow through command channels. However, there are exceptions—

- When the NBCC requests survey information, the unit doing the survey may report its data to the NBCC. Conduct this reporting during ground or aerial surveys.
- Attached units, operational control (OPCON) units, or units that provide area support report information to the supported headquarters.

This method of transmitting information depends on the tactical situation and the mission of the unit. NBC reports normally pass through the operations net. Wire transmission is an alternate means. The NBCC should evaluate all possible methods of communications and recommend those that best serve the purpose.

Friendly Attack Warning

Higher headquarters will warn units affected by a friendly nuclear strike whenever possible. Encode the warning or send by a secure means to avoid warning the enemy. Send a warning in the clear only if there is no time for the enemy to enact.

There are several ways to speed the warning. SOPs establish general procedures for passing a friendly nuclear attack warning and reaction to it.

Operation plans (OPLANs) can add more specific instructions about a particular operation, such as code words for a preplanned attack.

LS/A 2, ELO 3, Lesson Exercise 3

Click here to go to Lesson Exercise 3.

ELO 4

Action:	Describe the three basic NBC defensive principles.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 4, Introduction

Nuclear weapons cause casualties through blast, heat, and radiation effects. They restrict terrain by blowing down trees and buildings, starting fires, or cratering. They may cause radiological contamination over a large area. Biological and chemical weapons cause serious injury or death through their toxic properties.

NBC defense is a balance of three principles--avoidance, protection, and decontamination--to defend against the effects of nuclear, biological, or chemical weapons.

NBC Defensive Principle, Avoidance

Avoiding NBC attacks and hazards is the key to NBC defense. Forces not detected are less likely to be attacked. Therefore they will not need to apply protection and decontamination. Although avoidance will not always be possible, all forces seek ways to reduce the chances of being contaminated. Avoiding contamination involves bypassing contaminated areas as well as avoiding detection by the enemy. The use of psychological operations (PSYOP) can assist in avoidance of NBC attacks by targeting enemy decision-makers and public opinion with the objective of preventing NBC attacks.

Passive Avoidance Measures

Passive avoidance measures are those that a unit takes regardless of the status of NBC warfare. Good military tactics dictate many practices that will reduce the impact of enemy NBC or conventional attacks. Good training, improved positions, and dispersed forces are particularly effective in reducing the chances of an NBC attack and reducing casualties if an attack does occur.

- Training. Confusion, stress, and ever-present battlefield danger place a heavy burden on soldiers' endurance, courage, and will to win. Unit commanders improve readiness and combat performance by providing soldiers with realistic integrated training. They ensure that soldiers know how to protect themselves from NBC hazards.
- Camouflage and concealment.

LSA 1, ELO 4, Passive Avoidance Measures, continued	• Camouflage and concealment. Friendly units use measures to counter sophisticated enemy intelligence equipment used for infrared scanning, TV viewing, night vision, radio interception, and direction-finding. Good operations security (OPSEC), communications security (COMSEC), and electronic security protect the unit. Friendly forces use all forms of natural concealment as well as camouflage and smoke. Keeping hidden becomes a state of mind. Friendly forces actively practice camouflage, noise, light, litter, and communications discipline to avoid detection and targeting. • Hardened positions. Units continually harden and improve fighting positions to increase cover and protection. Reconnaissance locates ready-made, hardened shelters, culverts, tunnels, overpasses, caves, or built-up areas. • Dispersion. Friendly forces frequently require considerable space for dispersing and maneuvering. Dispersion protects the force and makes its intentions unclear to the enemy. Friendly forces continually analyze the effects of enemy nuclear and chemical weapons. They attempt to avoid positions that can be isolated by the obstacles created by these weapons. Dispersion decreases the probability of a single nuclear or chemical attack destroying the entire force. Dispersion is also a countermeasure to enemy obscurants. However, conventional weapon systems and maneuver forces may defeat the force because of the dispersion.
Active Avoidance Measures	Take active avoidance measures to avoid, control, or mitigate NBC hazards.
Contamination Detection	Commanders need information about contamination hazards and locations of clean areas. They get this information through the NBC warning and reporting system and from their own NBC recon effort.

LS/A 1, ELO 4, Reconnaissance	NBC reconnaissance is a multi-echelon process that begins at the national level and ranges down to the alert watchfulness of each soldier. Tactically, an NBC reconnaissance is a routine part of conventional combat operations. Recon elements check for contamination in addition to looking for enemy activity. Units check relatively small areas and routes of immediate interest to the unit commanders. NBC reconnaissance elements organic to corps and divisions also conduct NBC reconnaissance missions. These elements provide early warning of contamination; determine the extent of contamination, and find clear routes of advance. There are four general NBC recon techniques – search, survey, surveillance, and sampling used during zone, area, and route recon missions. • Use the search techniques to locate contaminated areas during reconnaissance operations. • Use the survey techniques to locate the contaminated area. The purpose of surveys are to define the extent of the contaminated area. • Surveillance is the systematic observation of a specific area for indication of an NBC attack.
Contamination Control	To maintain freedom of action, friendly forces can bypass contamination or practice mitigation techniques. Mitigation techniques include leaving nonessential forces behind, encapsulating personnel and critical items, and covering equipment. If friendly forces are already contaminated, they can control exposure by relocation to an uncontaminated area and decontaminating as appropriate.
Mission-Oriented Protective Posture (MOPP)	MOPP is the flexible use of protective clothing and equipment that balances protection with performance degradation. Wearing MOPP can cause heat and mental stress and reduce efficiency. The higher the MOPP level, the more protection it provides, but the more it degrades performance. The commander must weigh the needs of individual protection against unit efficiency. Base the MOPP levels on threat, temperature, work rate, and mission.

LS/A 1, ELO 4, Flexibility

MOPP is not a rigid procedure that puts everyone at the same level. To maintain the balance between protection and efficiency, leaders must apply MOPP with common sense.

Therefore, the primary responsibility of higher-level commanders is to provide subordinate commanders the threat information needed to set the most appropriate MOPP level for their mission.

When commanders provide MOPP guidance, they should not set levels so high as to limit the flexibility of their subordinates. Commanders should take care not to impose high MOPP levels over large areas merely as a precautionary measure.

MOPP Analysis

Leaders, generally battalion level, conduct a MOPP analysis based on the unit's particular situation. The analysis finds the balance between reducing the risk of casualties and accomplishing the mission. Commanders must recognize the significant increase in time required for mission execution in MOPP 3 or MOPP 4 and anticipate the effects of that degradation on subsequent missions. Leaders must also understand the increased water requirements for MOPP missions.

MOPP considerations require leaders to carefully analyze the factors of METT-T for their situation. MOPP analysis, in conjunction with METT-T, enables leaders to select the appropriate MOPP level. During MOPP analysis the commander considers—

- Mission.
- Work rate and its duration.
- Probable warning time.
- Terrain, weather, and time of day.
- Unit training and additional protection available.
- Alarm placement.
- Automatic masking policy.

LS/A 1, ELO 4, Nuclear Attack	An enemy nuclear attack would normally come without warning. The first indication is a flash of intense light and heat. Induced radiation arrives with the light. Blast and hurricane-like winds follow within seconds. Initial actions must, therefore, be automatic and instinctive. Dropping immediately and covering exposed skin provide protection against the blast and thermal effects.
Biological Attack	Personnel should treat a suspected biological attack just as a chemical attack. The protective mask provides protection against all known biological and military chemical agents. However, current detector systems will not react to biological agents.
Chemical Attack	Warning of a chemical attack may come from automatic alarm, vocal or visual signal, color change of detector paper, or symptoms observed in each other. The first reaction should always be to mask and then give the alarm. Soldiers take whatever cover is readily available to reduce the contaminants landing on the body. They conduct immediate decontamination as necessary to remove all contaminants from the skin. Liquid chemical agents can penetrate normal clothing, leather boots, and gloves; soldiers must don all NBC equipment (MOPP 4) for full protection.
Principles of Decontamination	Decontamination is costly in terms of manpower, time, space, and material. These same resources are required to fight the battle, so commanders must apply them wisely and sparingly. The following principles support this action— • Speed. Decontaminate as soon as possible to restore full combat potential as soon as possible. • Need. Decontaminate only what is necessary. Consider mission, time, extent of contamination, MOPP status, and decon assets available. • Limit. Decontaminate as close to site of contaminated equipment as possible to limit its spread. Do not move contaminated equipment, personnel, or remains away from the operational area if it is possible to bring decontamination assets (organic or supporting units) forward safely. This will keep the equipment on location, speed decon, and limit the spread of contamination to other areas. • Priority. Decontaminate the most important items first and the least important items last.

LS/A 1, ELO 4, Levels of Decontamination,

Teams or squads conduct operational decontamination using decontamination equipment organic to battalion-size units. If this equipment is not available, units will request vehicle washdown through command channels. The supporting chemical unit normally supports this task. Operational decon includes—

- MOPP gear exchange. Team of two or more personnel exchange contaminated overgarments for clean ones to remove gross contamination.
- Vehicle washdown. The crew of the lightweight decontamination system (LDS) sprays vehicles with hot, soapy water to speed the weathering process. Washdown limits the spread of contamination. Forces must select decontamination sites that avoid contamination of surface water or drinking sources.

Thorough decontamination is the most resource-intensive level of decon. It requires external support by platoon-or company-size elements assigned the mission of NBC decontamination. These elements require augmentation from supported units to accomplish missions. The three techniques used in thorough decontamination are—

- Detailed troop decontamination. The unit removes MOPP, monitors for contamination, and decontaminates masks with the assistance from a decon unit.
- Detailed equipment decontamination. A decontamination unit conducts equipment decon with the assistance of the contaminated unit.
- Detailed aircraft decontamination. A decontamination unit conducts aircraft decon with the assistance of the contaminated unit.

Effect of Decontamination

Decontamination has positive and negative effectiveness. The overriding positive effect and ultimate goal of decon are the restoration of the combat power lost when assuming MOPP. A negative, offsetting effect is a consumption of resources (time and supplies). Commanders must decide where the optimum trade-off occurs between restored power and resources depletion.

LS/A 1, ELO 4, Combat Power Restoration

Immediate decontamination allows soldiers to survive and continue to fight on the battlefield. Operational decontamination allows the force to fight longer by reducing contamination. Soldiers may temporarily unmask under controlled conditions to eat, drink, and rest. When time permits, thorough decontamination restores almost all-combat power of the contaminated force. However, decontamination operations reduce combat power during the decontamination period.

Resource Depletion

All decontamination uses valuable resources including time. Staff estimates must include time and resupply requirements. Chemical personnel work closely with combat operators and logistician to determine resources needed and their availability.

Guidelines for Decontamination

Every decontamination mission is unique. Commanders use on-the-spot judgment to combine the fundamental principles of NBC defense. Leaders must—

- Understand contamination hazards and avoid contamination when possible.
- Protect forces and equipment when contaminated.
- Know how to neutralize or remove the hazards of contamination.
- Conduct only enough decontamination to continue the mission until a more thorough decontamination can take place.
- Leave as much combat power forward as possible during decontamination. When necessary, units may conduct small-group decontamination.

LS/A 2, ELO 4, Lesson Exercise 4

Click here to go to Lesson Exercise 4.

ELO 5

Action:	Explain the uses of Smoke, Obscurants, Non-Lethal, and Flame on the battlefield.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 5, Introduction

You will use smoke and obscurants on the battlefield to enhance friendly operations and degrade enemy operations. All forces on the battlefield use smoke and battle-generated dust. When coupled with naturally occurring obscurants, such as rain, snow, or fog, limited visibility becomes the normal battlefield operating condition.

Friendly and enemy surveillance and weapon systems use visual, infrared, or radar sensors to see the battlefield. Smoke and obscurants can change the relative combat power of opposing forces by changing the effectiveness of their weapon systems. In addition, smoke and obscurants increase survivability and enhance force effectiveness by—

- Degrading the enemy's ability to see.
- Disrupting the enemy's ability to send visual signals.
- Concealing friendly forces.
- Deceiving the enemy.
- Sending friendly signals, including identification of forces and targets.
- Energy weapons.
- Enhancing the effectiveness of friendly weapons systems.

Smoke Uses at The Operational Level of War

At the operational level of war, corps and echelons above corps use smoke to conceal the location or size of mobile forces. You will use smoke to conceal logistics over the shore (LOTS) operations, dams, locks, and critical main supply routes (MSRs). Large, obscurant clouds and dummy smoke can support deception plans at operational level. Large-area smoke increases survivability of key logistics and transportation assets by degrading missile and air attack guidance systems. Smoke can conceal facilities necessary to sustain the force, such as ports, terminals, and critical rail facilities.

Smoke Uses at The Tactical Level of War

At the tactical level of war smoke supports movement and positioning of forces on the battlefield. It covers the logistical support of forces before, during, and after engagements. Friendly forces use smoke to support the commander's concept of operations or counter an immediate enemy threat. Smoke disrupts enemy command and control. It degrades enemy reconnaissance, intelligence, surveillance, and target acquisition. Smoke counters antitank guided missiles (ATGMs), directed-energy weapons, and laser range-finding and designating systems. It supports battlefield deception operations.

LSA 1, ELO 5, Smoke Sources

Forces tailor a variety of delivery means and munitions to produce smoke screens. These sources include—

- Projected smoke. Artillery, mortars, and multifunction rockets can deliver a dense white smoke using white phosphorus (WP), red phosphorus (RP), and hexachloroethane (HC).
- Generated smoke. Smoke generators, smoke pots, and screening smoke hand grenades produce white smoke using fog oil (for generators) or HC (for pots and grenades). Signaling grenades produce colored smoke for identifying and marking.
- Self-defense smoke. Some US vehicles have vehicle engine exhaust smoke systems (VEESSs), which use diesel fuel to create a smoke screen. Many vehicles have smoke grenade launchers, which can create a self-protection screen within seconds.

Deliberate Smoke

Units at every level should plan deliberate smoke operations to support the commander's concept of operations using any available smoke source. The characteristics of deliberate smoke operations are—

- Extensive planning at the command level that controls the affected area.
- Extensive coordination (including coordination with units adjacent to the areas being smoked).
- Extended periods of operation (typically hours to days).
- Significant logistics support.
- Significant support for mobility (deliberate smoke with deliberate breach and hasty smoke within-stride breach), countermobility, and survivability operations.
- Extensive and redundant communication.
- Alternate (back up) plans.
- Deception plans.

During deliberate smoke operations, forces conceal or protect large areas (several square kilometers) behind the forward line of own troops (FLOT) with smoke generators supplemented by smoke pots. They obscure point or small-area targets in enemy–controlled territory with projected smoke assets (for example, artillery, mortars, naval gunfire, and close air support rockets). Deliberate operations can consume large amounts of fuel, fog oil, and munitions. They require extensive use of relatively scarce smoke generator and artillery assets.

LSA 1, ELO 5, Hasty Smoke	Battalion task forces and smaller units conduct hasty smoke operations to counter an immediate enemy tactical threat. Forces conducting these operations use the unit basic load of smoke-producing sources, augmented by rapidly responding assets like mortars, artillery, and smoke units if available. The characteristics of hasty smoke operations are— • Minimal time available for planning and executing the mission. • Minimal coordination. • Relatively short duration (typically one or two hours or less). • Use of organic assets. • Reliance on SOPs/battle drills. During hasty smoke operations forces create local screens to support small unit maneuver or disengagement. Hasty smoke operations require rapid planning and execution. Units must still preplan the operational and logistical support for using hasty smoke.
Battlefield Application	Friendly units use smoke and obscurants to attack and defeat enemy recon, intelligence, surveillance, and target acquisition effects and to degrade the enemy's combat effectiveness. For example, we may fire obscuring smoke mixed with high explosives onto an enemy ATGM position to defeat its target acquisition.
Obscuring Smoke	Friendly units apply smoke directly on enemy positions to confuse and disorient direct-fire gunners and artillery forward observers.
Screening Smoke	Friendly forces conceal positions and activities from enemy ground or air observation by using screening smoke over their own operational areas or between friendly and enemy forces. Use a smoke blanket, a haze, or a curtain may accomplish this mission.
Marking Smoke	Forces use marking smoke to identify targets or friendly forces during close air support, attack helicopter operations, and other fire support tasks. Marking smoke also supports prearranged battlefield communications for control measures, link-up operations, and tactical cues.

LS/A 1, ELO 5, Tactical Employment of Smoke	Commanders use all factors of METT-T to plan smoke operations. The weather-dependent nature of smoke requires intense preparation. Time of day, humidity, and wind direction are major considerations when planning effective smoke support.
Smoke in The Offense	Before the battle, smoke denies the enemy information about the composition and disposition of friendly forces. It screens assembly areas and defeats enemy target acquisition and surveillance. Smoke conceals maneuver and combat support forces and contributes to deception operations.
Smoke in The Defense	Forces in the defense use smoke primarily to increase survivability and counter enemy reconnaissance, surveillance, and target acquisition.
Smoke Support for Tactical Deception	Smoke draws attention. Units use smoke to enhance deception operations, drawing attention away from the main effect and misleading the enemy about friendly force intentions. The enemy may divert forces and fires to the deception, reducing capability to mass forces against friendly force operations. For example, using smoke to conceal a dummy defensive preparation and support activities confuses the enemy as to the precise location of the defense.
Countering Enemy Use of Smoke	Enemy forces use smoke as a control measure to synchronize the movement of attacking forces. US forces use a variety of countermeasures to defeat enemy use of smoke and obscurants. Some combat actions common to the battlefield with or without obscurants serve as countermeasures to enemy smoke use. These include— • Offensive operations, which disrupt the enemy's ability to conduct or support smoke operations. • Electronic warfare, which hinder enemy movement and command, control, and communications in smoke. • Obstacles, which disrupt enemy timetables for using smoke. • Tactical deception, which prevents the enemy from locating (and smoking) friendly positions. • Use friendly countersmoke to confuse the enemy and prevent its effective use of smoke as a control measure. • Counterbattery fires, which limit enemy delivery capability.

LS/A 1, ELO 5, Non-Lethal Operations	Riot control agents (RCAs) and herbicides are non-lethal chemicals, which have military applications. Non-lethal materials are available to the commander under specific conditions. We discussed the policy of the United States on the use of RCAs and herbicides in ELO 1, pg 7.
Riot Control Agents	RCAs are compounds that produce temporary irritating or incapacitating effects when used in field concentrations. They include tearing (crying), sneezing, and vomiting agents. Tearing agents are the most frequently used RCAs.
Types of Riot Control Agents	The most commonly used riot control agent, CS, is a white solid that causes a blinding flow of tears and involuntary closing of the eyes. Other agents in the US Army inventory include CSX, CS1, CS2, and CR. The physiological effects desired and the dissemination means available determine the choice of RCA.
The Uses of RCAs	The Army uses RCAs in training, riot control, noncombatant evacuation operation (NEOs), and situations in which short-term affects are acceptable. U.S. forces disseminate RCAs in hand grenades, ring airfoil projectiles, 40-millimeter cartridge grenades, or bulk agent aerial and ground dispersers.
RCA Uses in Low-Intensity Conflict	In low-intensity conflict unsophisticated forces could use chemical agents or RCAs. In most cases these forces will have only limited protective equipment. Many of these forces may not have any protective equipment. As a result, retaliation with RCAs will be highly effective and will mitigate any advantages achieved by the enemy. RCAs are effective psychological weapons in areas where superstition or fear of the unknown are common among insurgents unfamiliar with these agents.
RCA Uses in Mid-Intensity Conflict	U.S. forces use RCAs against relatively sophisticated enemy forces in mid-intensity conflict. Some elements of these enemy forces will have the training and equipment to withstand RCA use. Nevertheless, RCAs will still degrade enemy operations by forcing the use of that protective equipment. Protective masking will reduce the effectiveness of enemy fire and interfere with its command and control.

LS/A 1, ELO 5, RCA Uses in High-Intensity Conflict	When approved for use in a high-intensity conflict against sophisticated and well-equipped forces, RCAs provide the commander a measured degree of force to influence the outcome of military operations. In general, use RCAs in high-intensity conflicts in the same matter as in low- and mid-intensity conflicts. However, they are seldom used alone. Use RCAs any time serious injury or death is not the primary objective of the operation. RCAs offer commanders an opportunity to inflict temporary incapacitation, degradation, and terrain restriction.
Herbicides	Historically, herbicides have enabled railroads, power companies, and farmers to control unwanted vegetation. U.S. forces used herbicides in southeast Asia to clear fields of fire around base camps and along lines of communications. U.S. forces also used herbicides to destroy concealment vital to the enemy's survival. However, the United States no longer maintains herbicides in its inventory.
Types of Herbicides	Herbicides kill or alter plant growth. Plant growth regulators alter the growth rate of vegetation. Defoliants cause plants to shed their leaves prematurely but not kill them. When selecting a defoliant for use, planners consider the effects desired and duration rate. Desiccants kill plants by dehydrating them. Soil sterilants sterilize both plants and seeds.
Uses of Herbicides	Forces use herbicides to reduce vegetation along suspected enemy routes of advance, assembly and hiding areas, and supply routes. Aerial observers can better monitor activities in these areas. Herbicides neutralize the advantages of concealment.

LS/A 1, ELO 5, Limited First Use of Herbicides	Upon Presidential approval, the Army uses herbicides in areas under US control and along the forward line of own troop (FLOT) to— • Kill the vegetation bordering roads, paths, trails, railroads, and waterways. This reduces possible ambush sites. • Kill the vegetation surrounding vulnerable base camps, communication complexes, pipelines, supply points, assault strips, landing zones, and air defense sites. • Control vegetation in fields of fire and avenues of approach. The resulting fields of fire may destroy or canalize the enemy during approaches and withdrawals. • Destroy large areas of dense vegetation for major construction projects or for health and sanitation program.
Retaliatory Roles	Once an enemy uses herbicides, chemicals, toxins, pathogens, or RCAs against allied forces or United States, the President may approve United States retaliatory use of herbicides. Uses of herbicides require Presidential approval in war, but host nation agreements may also require allied approval. You must keep local civilian officials and civil affairs officers abreast of the effects of herbicide operations. When fighting as a member of an alliance, United States forces must follow alliance policies regarding use.
Flame Operations	Combatants have historically used flame in wars to kill, injure, or demoralize personnel and destroy equipment and structures. Flame was the major casualty-producer in World War II. For example, the incendiary raid on Tokyo in March 1945 killed more people (197,000) than the nuclear attacks on Hiroshima and Nagasaki. The human fear of fire, together with the physical damage it produces, accounts for the tactical success of flame in combat.
Tactical Use of Flame Operations	Forces use flame weapons and flame field expedients (FFEs) during offensive and defensive operations and military operations on urbanized terrain (MOUT).

LS/A 1, ELO 5, Uses of Flame in The Offense	All combat scenarios should include flame operations. Light forces' organization structure suits the use of flame well, to include FFE. Therefore, training for low-intensity conflict (LIC) must include the construction and use of FFE. Army standard flame weapons can produce casualties in bunkers, buildings, covered, or open fighting positions. It can also damage vehicles and destroy combustible supplies, ammunition, and materiel.
Uses of Flame in The Defense	Use flame weapons and FFE devices in the defense to— • Reinforce obstacles. • Augment final protective fires. • Cover dead spaces and gaps in the defense. • Illuminate critical areas of the battle.
Flame Weapons and FFE Devices in MOUT	Forces can also use flame effectively in MOUT. Defenders can use flame weapons and FFE devices to destroy attacking forces. Attackers may target such complexes of large cities as transportation terminals, multistory buildings, communication facilities, and subway facilities, to disrupt the defender's operations.
Defense Against Flame	Friendly forces can expect the enemy to use flame weapons. Surviving an attack of this nature may depend on how well soldiers defend themselves against flame operations.
Supporting Fires	The best defense against enemy flame operations is to identify flame weapons and destroy them before they get into usable range. They may identify the priority for destruction of these weapons in the fire support plans of direct support units. Large-area and projected smoke can obscure friendly forces from attacks by flame weapons.
LS/A 2, ELO 5, Lesson Exercise 5	Click here to go to Lesson Exercise 5.

ELO 6

Action:	Explain NBC characteristics and considerations in offensive and defensive operations.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 6, Introduction

Offense is the decisive form of war. The main purpose of the offense is to defeat, destroy, or neutralize the enemy force. Because tactical offensive operations often expose the attacker, they normally require local superior combat power at the point of the attack. Massing of combat power can create a window of vulnerability to enemy weapons of mass destruction (WMD).

Focus of NBC Considerations in the Offense

The key to success in an offensive campaign lies in defeating the enemy before the offense reaches its culmination. Culmination occurs because the attacker consumes resources and commits forces through successive battles. Under chemical or biological conditions, culmination may come earlier than in conventional offense. Successful attacks may require more people and more time. Personnel in MOPP become exhausted sooner. These factors drain an attacker's resources and slow its momentum. The focus of friendly NBC considerations is to conserve combat power in the attack so the attacking force can defeat the enemy before reaching its culminating point.

NBC Considerations during the Offense

The defending force commander will plan to disrupt the attacker's command and control. He may use NBC weapons to cause casualties and contaminate equipment and/or terrain, thus degrading the attacker's combat power. The attacking force commander preserves synchronization and the strength of his force through the fundamentals of NBC defense.

Preparing for Attacks

Units require additional preparation time under NBC conditions. Units rehearse actions for responding to enemy NBC attacks. Commanders may implement additional control measures under battlefield nuclear warfare or the threat of biological or chemical strikes. These also facilitate the attack under limited visibility conditions.

LS/A 1, ELO 6, Conducting Offensive Operation under NBC Conditions	The offensive attack must be violent and rapid. It integrates all available combat power, including nuclear fires when authorized. The attacker minimizes his exposure to enemy conventional, nuclear, and chemical fires through— • Maneuvering and using counterfire supported by smoke and obscurants. • Avoiding or rapidly crossing contamination. • Maintaining operations, communications, and electronic security. • Dispersing forces.
Transition to Defense	Offensive objectives are of two basic types—those that focus on destroying the enemy and those that focus on seizing terrain. In either event the commander must recognize when he is approaching the culmination. At this point he will have expended so much of his strength and resources that he will lose his advantage over the enemy. He must shift to the defense long enough to rearm and refit before returning to the offense.
Learning Step/ Activity (LS/A) 2, ELO 6, Introduction	The immediate purpose of defensive operations is to cause an enemy attack to fail. Defensive operations may also achieve one or more of the following: concentrate forces elsewhere; wear down enemy forces as a prelude to offensive operations; and retain tactical, strategic, or political objectives.
Defense Patterns	There are two patterns of defensive operations—mobile and area.
Mobile Defense	A mobile defense is a defense that orients on the destruction of enemy forces by trading terrain to expose the enemy to a counterattackng mobile reserve. Mobility is essential; however, if NBC weapons are used they can cause terrain restriction (contamination, tree blowdown, or cratering) and hinder friendly mobility. Restricted mobility impedes the commander's ability to conduct a successful mobile defense. Commanders train their units to cross or bypass contaminated terrain. Mechanized and armored forces can cross contamination rapidly but will become contaminated themselves. Forces may remain in MOPP for extended periods. An attack in MOPP gear takes additional people and time for success. Therefore, commanders must plan to use larger forces or accept greater risk.

LS/A 2, ELO 6, Area Defense

An area defense is defense that focuses on denying the enemy access to designated terrain for a specified time, rather than on the outright destruction of enemy.

Commanders organize the area defense around a static framework provided by planned defensive positions. These obstacles protect friendly positions and slow the attacker. Flame weapons enhance the effects of minefields and barriers and contribute to destruction, shock effect, and/or illumination. Nuclear fires destroy enemy forces before they can enter the battle.

LS/A 3, ELO 6, Lesson Exercise 6

Click here to go to Lesson Exercise 6.

ELO 7

Action:	Explain NBC Threats in rear operations.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 7, Introduction

Rear operations ensure freedom of maneuver and continuity of operations. Conduct rear operations using the basic tenets of Army operations.

Rear Area Threat

Rear-area activities are the most lucrative targets for enemy NBC use. Disruption of logistical operations by the use of NBC weapons is an integral part of enemy tactics. Attacking our sustainment nodes weakens main battle area force effectiveness, places persistent chemicals out of enemy's immediate maneuver, and permits subsequent rapid and deep penetrations to achieve their operational objectives. To achieve these aims, threat activities in rear areas will target key critical support and logistic facilities and units with NBC and conventional weapons. These areas will include—

- Special weapon storage sites and delivery systems.
- Command and control facilities.
- Air defense artillery sites.
- Airfields.
- Seaports.
- Main supply routes.

LS/A 1, ELO 7, NBC Defense in Rear Operations

Contamination avoidance and control reduce the effects of the NBC on the battlefield. Since rear-area activities make the most lucrative targets, they use the passive measures of contamination avoidance before hostilities commence to minimize the effects of NBC attacks. Once NBC weapons have been used, units implement contamination control that encompasses decisions to limit the spread of contamination and reduce or eliminate its effect on sustained operations. System warning, reporting, locating, and identifying NBC hazards give the indication of presence or absence of these hazards and what type hazard is present in order to determine duration and recognize symptoms.

LS/A 2, ELO 7, Lesson Exercise 7

Click here to go to Lesson Exercise 7.

ELO 8

Action:	Recognize the responsibilities of chemical personnel at battalion and brigade level.
Conditions:	In a self-study environment, using the material contained in this section.
Standard:	IAW FM 3-100 Chemical Operations, Principles and Fundamentals, May 96.

Learning Step/ Activity (LS/A) 1, ELO 8, Introduction

As a member of a battle staff, it is important that you understand and recognize the responsibilities of chemical personnel at various levels, and their interaction with the functional areas of the principle staff.

Battalion Personnel

Maneuver battalion personnel consist of the chemical officer, chemical NCO, and decontamination specialist.

Each non-maneuver battalion has a chemical staff NCO and an NBC specialist. These chemical sections train personnel and help plan NBC operations. These soldiers supervise the technical aspects of battalion subordinate unit NBC operations. They also help subordinate company chemical NCOs. They recommend to the S-4 use of funds for NBC equipment or supplies. They must periodically report authorizations and on-hand and on-requisition status. Also, they must know budgeting and forecasting principles.

LS/A 1, ELO 8, Battalion Personnel (S-1)	The chemical personnel— • Provide technical information to help the S-1 prepare casualty forecasts.
Battalion Intelligence (S-2)	The chemical personnel— • Provide technical assistance to the S-2 for analysis of the NBC threat and ensure the analysis is in the unit OPLANs and SOPs. • Receive, relay, and disseminate information on enemy NBC attacks. • Help the S-2 coordinate activities of any attached or assigned NBC recon elements. Recommend employment to unit commanders. • Ensure that key personnel receive an appropriate, specific NBC threat briefing pertaining to their mission. Also, make sure other newly assigned personnel receive an unclassified NBC threat briefing.
Battalion Training (S-3)	The chemical personnel— • Coordinate and monitor battalion NBC defense training. Ensure the integration of NBC defense training in all aspects of training. • Assist in establishing and receiving unit-level mission-essential task list. Provide recommendations to ensure performance of battle tasks under NBC conditions. • Evaluate individual and collective NBC training. Determine training needs and recommend training required to correct deficiencies. • Project NBC training ammunition requirements in coordination with the S-3 and S-4. • Maintain the NBC annex to the battalion SOP. • Maintain and update NBC-related publications. • Maintain close contact with subordinate units and higher headquarters, keeping them abreast of NBC activities. • Evaluate the unit's ability to operate under NBC conditions. • Use the results of platoon drills, ARTEPs, and other evaluations to improve NBC readiness • Receive, correlate, and disseminate information on NBC attacks. • Consolidate subordinate unit OEG and radiation status information, and report to higher headquarters as required. • Perform MOPP analysis. • Integrate NBC threat analysis into the IPB process. • Organize and establish (as required) a battalion NBCC. Coordinate and supervise activities of radiological survey and monitoring teams and chemical detection teams. • Recommend use of supporting decon, NBC recon, and smoke units. • Report NBC equipment and personnel shortfalls to higher headquarters.

LS/A 1, ELO 8, Battalion Logistics (S-4)

The chemical personnel—

- In coordination with the S-4, monitor expenditure of funds provided for NBC defense equipment.
- Monitor outstanding requisitions and NBC equipment maintenance.
- Forecast and monitor inventories of NBC equipment, as required by higher headquarters, in coordination with company chemical NCOs.
- Recommend the amount of funds needed to replace shortages, expendables, and items consumed in training based upon authorizations contained in appropriate publications.
- Conduct periodic NBC equipment inspections.
- Monitor NBC defense equipment status.
- Determine authorizations, forecast NBC equipment to support training and basic loads.
- Advise the S-4 on shelf life and rotation of NBC stocks.
- Ensure that all contingency NBC equipment is in units' load plans.

Brigade Personnel

The brigade chemical section consists of a chemical officer and an NBC staff NCO. Cavalry regiments, separate brigades, and theater defense brigades have a larger NBC staff. The brigade chemical officer works as a special staff officer under the staff supervision of the brigade XO. The brigade chemical officer/assistant S-3 works under the supervision of the brigade S-3. Through staff visits, coordination, and inspections of subordinate units, the brigade chemical section serves as a focal point for NBC operations. The chemical section assists subordinate units in all NBC defense areas to improve NBC readiness.

Brigade Personnel (S-1)

The chemical personnel—

- Provide recommendations concerning assignments of chemical personnel.
- Ensure proper use of subordinate unit chemical personnel and promote integration of nonchemical personnel into chemical activities.

LS/A 1, ELO 8, Brigade Intelligence (S-2)	The chemical personnel— • Provide technical help to the S-2 for analysis of the NBC threat and ensure that PIR and threat information are reflected in the units OPLANs and SOPs. • Help subordinate units in their threat analysis and evaluate/disseminate information to key and newly assigned personnel. • Integrate NBC reconnaissance assets into reconnaissance and surveillance (R&S) plans.
Brigade Training (S-3)	The chemical personnel— • Monitor NBC defense training and integration of NBC defense tasks in all aspects of training. • Determine training needs through staff visits and evaluations. Recommend training required to correct deficiencies. • Assist in establishing and receiving unit-level mission-essential task list. Provide recommendations to performance of battle tasks under NBC conditions. • Project NBC training ammunition requirements in coordination with the S-3 and S-4. • Give technical staff help to subordinate units. Explain individual and collective training policies, procedures, and guidance. • Plan and coordinate NBC training. • Include ARTEP NBC common module tasks in all mission-related training and evaluations. • Ensure achievement of at least the minimum standard of proficiency by all individuals and units. • Make maximum use of post or area NBC defense courses. Provide quotas to units needing them the most. • Include medical training in a contaminated environment in exercises. • Use the results of ARTEPs unit evaluations, internal and external ARTEPs evaluations, and field training exercise (FTXs) to improve NBC readiness. • Evaluate NBC readiness through the maintenance of NBC equipment, use of funds, use of personnel, and quality of training provided. • Monitor and evaluate subordinate unit NBC proficiency. • Maintain the NBC annex to the brigade SOP. • Maintain and update NBC-related publications. • Maintain close contact with subordinate units and higher headquarters. Keep them abreast of NBC activities. • Receive, correlate, and disseminate information on NBC attacks. • Consolidate battalion radiation status. Report division as required.

LS/A 1, ELO 8, Brigade Training (S-3), continued	• Provide recommendations concerning MOPP levels appropriate for enemy threat and tactical situation. • Integrate NBC threat analysis into the IPB process. • Establish and operate the brigade NBC subcollection center. Coordinate activities and reports with appropriate host nation territorial organizations. • Perform vulnerability assessment. • Recommend employment of supporting NBC recon, smoke, and decon units. • Report NBC equipment and personnel shortfalls to division chemical section. • Provide NBC input to plans, orders, and SOPs. • Plan for the brigade chemical staff personnel to assume the mission of the division NBCC if it becomes nonoperational.
Brigade Logistics (S-4)	The chemical personnel— • Help S-4 and maintenance personnel follow up on outstanding requisitions and NBC equipment maintenance procedures and priorities. • Conduct spot checks of subordinate unit NBC equipment on hand and on requisition. • Ensure subordinate units forecast sufficient funds to replace shortages, expendables, and items consumed in training. • Help plan to rotate forward pre-positioned stocks of NBC equipment and decontaminants. • Develop plans for equipping and training mission-essential civilians. • Help subordinate units determine authorizations, forecast NBC equipment to support training and war reserve stockage. • Help the S-4 cross-level NBC equipment to obtain the best overall NBC readiness posture. • Inspect rotation of shelf-life items, load plans for NBC war reserve stocks, and deployment plans/SOPs related to NBC defense. • Monitor and recommend input of NBC-related data into unit status reports. Correct deficiencies if possible.
LS/A 1, ELO 8, Lesson Exercise 8	Click here to go to Lesson Exercise 8.

SECTION IV SUMMARY

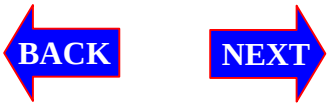
Review/ Summarize Lesson	This lesson discussed the principles and fundamentals of chemical operations in support of Army operations. The lesson touched on chemical mission areas such as NBC defense, smoke, non-lethal, and flame operations. This lesson also discussed chemical doctrinal concepts in relation to Army operations doctrine. This lesson will help you gain a better understanding of NBC operations on the battlefield.
Check On Learning	The eight lesson exercises that you completed during this lesson serve as the check on learning for the TLO.
Transition to Next Lesson	None.

SECTION V STUDENT EVALUATION

Testing Requirements	Prior to being enrolled into Phase II of the Battle Staff Course you must take a Phase I Exam that includes questions on material from this lesson. You must correctly answer 70% of the multiple choice questions to receive a "GO" on the Phase I exam. A "GO" is required for enrollment into Phase II.

Lesson Exercise 1: Instructions

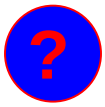
The following five questions will test your knowledge of the materials covered in ELO 1. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.



The United States does not consider _____ as chemical weapons.

A. contaminants
B. herbicides
C. riot control agents
D. toxins

BACK NEXT



The United States will never use _____ agents.

A. biological
B. blister
C. choking
D. nerve

BACK NEXT

The United States may use chemical weapons in retaliation for the enemy's use of chemical or biological agents.

A. False.
B. True.

BACK NEXT

The United States may use _____ weapons to terminate a conflict or war at the lowest acceptable level of hostilities.

A. conventional
B. chemical
C. nuclear
D. neutron

BACK NEXT

The United States _____ policy is to seek a reliable, verifiable ban on the production, stockpiling, and use of NBC weapons.

A. defense
B. employment
C. military
D. national security

BACK ELO 2

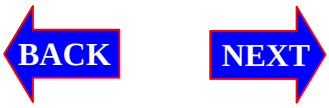
INCORRECT

The correct answer is B.

The United States does not consider herbicides as chemical weapons. PTP, Page 7.

BACK NEXT

CORRECT



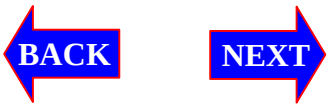
INCORRECT

The correct answer is A.

The United States will never use biological agents. PTP, Page 7.

BACK NEXT

CORRECT



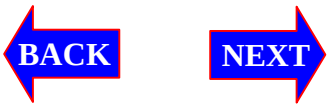
INCORRECT

The correct answer is A.

The United States will never use chemical weapons in retaliation for the enemy's use of chemical or biological agents. PTP, Page 7.

BACK NEXT

CORRECT



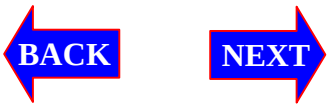
INCORRECT

The correct answer is C.

The United States may use nuclear weapons to terminate a conflict or war at the lowest acceptable level of hostilities. PTP, Page 6.

BACK NEXT

CORRECT



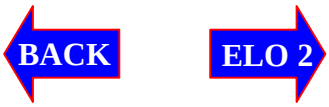
INCORRECT

The correct answer is D.

The United States national security policy is to seek a reliable, verifiable ban on the production, stockpiling, and use of NBC weapons. PTP, Page 6.

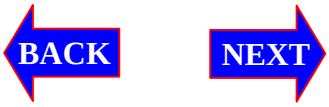
BACK ELO 2

CORRECT



Lesson Exercise 2: Instructions

The following three questions will test your knowledge of the materials covered in ELO 2. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.



The battle management requires direct involvement of the chemical leader or staff officer to implement the chemical plan into the _____ concept of the operation.

A. commander's
B. higher Headquarters'
C. staffs
D. units commanders

BACK NEXT

The chemical advisor coordinates with staff officers on _____ ,

_____ , and _____ issues.

A. NBC defense, smoke, and force
B. NBC defense, smoke, and staff
C. NBC defense, smoke, and flame
D. Nuclear defense, chemical, and employment

BACK NEXT

The chemical officer or NCO works closely with the staff to prepare the staff estimates based on the commander’s guidance.

A. False.
B. True.

BACK ELO 3

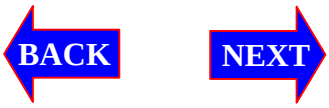
INCORRECT

The correct answer is A.

The battle management requires direct involvement of the chemical leader or staff officer to implement the chemical plan into the commander's concept of the operation.
PTP, Page 8.

BACK NEXT

CORRECT



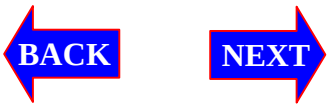
INCORRECT

The correct answer is C.

The chemical advisor coordinates with the staff officers on NBC defense, smoke, and flame issues. PTP, Page 9.

BACK NEXT

CORRECT



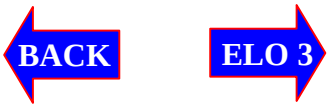
INCORRECT

The correct answer is B.

The chemical officer or NCO works closely with the staff to prepare the staff estimates based on the commander's guidance. PTP, Page 9.

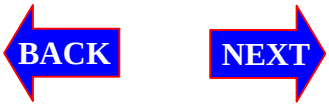
BACK ELO 3

CORRECT



Lesson Exercise 3: Instructions

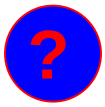
The following five questions will test your knowledge of the materials covered in ELO 3. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.



Which NBC report is the Monitoring and Survey Report?

A. NBC-1.
B. NBC-2.
C. NBC-3.
D. NBC-4.

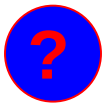
BACK NEXT



Which NBC report is the Evaluated Data Report?

A. NBC-1.
B. NBC-2.
C. NBC-3.
D. NBC-4.

BACK NEXT



Which NBC report is the Observers' Initial Report?

A. NBC-1.
B. NBC-3.
C. NBC-4.
D. NBC-6.

Which NBC report is Actual Contaminated Areas Report?

A. NBC-3.
B. NBC-4.
C. NBC-5.
D. NBC-6.

BACK NEXT

Which NBC report is the Warning of Predicted Contamination Report?

A. NBC-3.
B. NBC-4.
C. NBC-5.
D. NBC-6.

BACK ELO 4

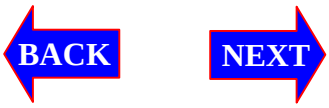
INCORRECT

The correct answer is D.

The NBC-4 is the Monitoring and Survey Report. PTP, Page 11.

BACK NEXT

CORRECT



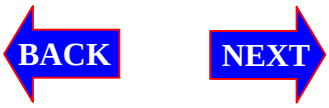
INCORRECT

The correct answer is B.

The NBC-2 is the Evaluated Data Report. PTP, Page 10.

BACK NEXT

CORRECT



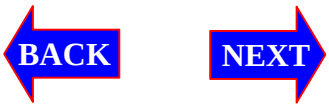
INCORRECT

The correct answer is A.

The NBC-1 is the Observers' Initial Report. PTP, Page 10.

BACK NEXT

CORRECT



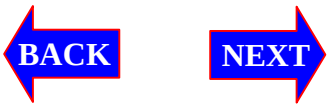
INCORRECT

The correct answer is C.

The NBC-5 is Actual Contaminated Areas Report. PTP, Page 11.

BACK NEXT

CORRECT



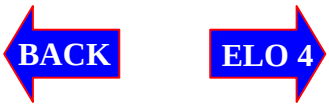
INCORRECT

The correct answer is A.

The NBC-3 Warning of Predicted Contamination Report. PTP, Page 11.

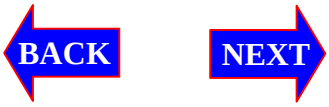
BACK ELO 4

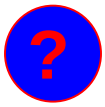
CORRECT



Lesson Exercise 4: Instructions

The following three questions will test your knowledge of the materials covered in ELO 4. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.

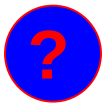




What NBC defensive principle forms the key to NBC defense?

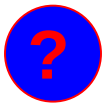
A. Avoidance.
B. Decontamination.
C. Dispersion.
D. Protection.

BACK NEXT



_____ is not a rigid procedure that puts everyone at the same level.

A. MOPP
B. Detection
C. Dispersion
D. Reconnaissance



_____ cause casualties through blast, heat, and radiation effects.

A. Biological weapons
B. Chemical weapons
C. Herbicides
D. Nuclear weapons

BACK ELO 5

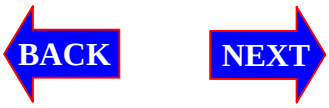
INCORRECT

The correct answer is A.

Avoidance is the key to NBC defense. PTP, Page 13.

BACK NEXT

CORRECT



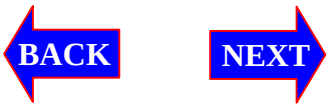
INCORRECT

The correct answer is A.

MOPP is not a rigid procedure that puts everyone at the same level. PTP, Page 16.

BACK NEXT

CORRECT



INCORRECT

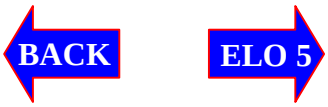
The correct answer is D.

Nuclear weapons cause casualties through blast, heat, and radiation effects.

PTP, Page 17.

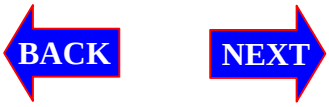
BACK ELO 5

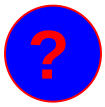
CORRECT



Lesson Exercise 5: Instructions

The following four questions will test your knowledge of the materials covered in ELO 5. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.





Smoke and obscurants are used on the battlefield to enhance friendly operations and degrade enemy operations.

A. False.
B. True.

BACK NEXT

What are three means used to produce smoke?

A. General smoke, protecting smoke, and screening smoke.
B. Green smoke, position smoke, and stationary smoke.
C. Generator smoke, projected smoke, and spraying smoke.
D. Generated smoke, projected smoke, and self-defense smoke.

BACK NEXT

Battalion task forces and smaller units conduct _____smoke operations to counter an immediate enemy tactical threat.

A. deliberate
B. hasty
C. large-area
D. protected

BACK NEXT

Combatants have historically used _____ in wars to kill, injure, or demoralize personnel and destroy equipment and structures.

A. Focus
B. Flame
C. Fear
D. Force

BACK ELO 6

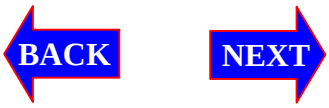
INCORRECT

The correct answer is B.

Smoke and obscurants are used on the battlefield to enhance friendly operations and degrade enemy operations. PTP, Page 20.

BACK NEXT

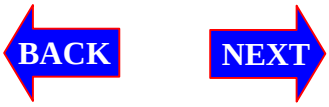
CORRECT



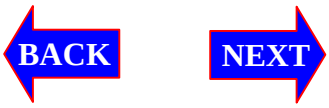
INCORRECT

The correct answer is D.

The three means and munitions use to produce smoke are generated smoke, projected smoke, and self-defense smoke. PTP, Page 21.



CORRECT



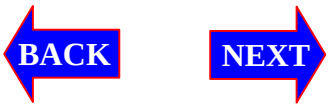
INCORRECT

The correct answer is B.

Battalion task forces and smaller units conduct hasty smoke operations to counter an immediate enemy tactical threat. PTP, Page 22.

BACK NEXT

CORRECT



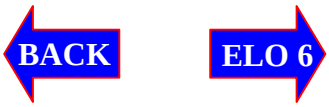
INCORRECT

The correct answer is B.

Combatant have historically used flame in wars to kill, injure, or demoralize personnel and destroy equipment and structures. PTP, Page 26.

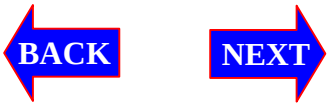
BACK ELO 6

CORRECT



Lesson Exercise 6: Instructions

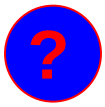
The following three questions will test your knowledge of the materials covered in ELO 6. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.



The attacking force commander preserves synchronization and the strength of his force through the fundamentals of NBC defense.

A. False.
B. True.

BACK NEXT



What are the two patterns of defensive operations?

A. Maneuver and area.
B. Mobility and attack.
C. Mobile and area.
D. Movement and attack.

_____ weapons enhance the effects of minefield and barriers and contribute to destruction, shock effect, and/or illumination.

A. Chemical
B. Flame
C. Nuclear
D. NBC

BACK ELO 7

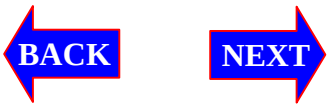
INCORRECT

The correct answer is B.

The attacking force commander preserves synchronization and the strength of his force through the fundamentals of NBC defense. PTP, Page 28.

BACK NEXT

CORRECT



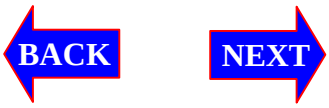
INCORRECT

The correct answer is C.

The two patterns of defensive operations are mobile and area. PTP, Page 29.

BACK NEXT

CORRECT



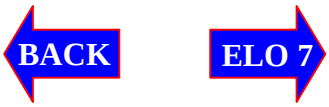
INCORRECT

The correct answer is B.

Flame weapons enhance the effects of minefield and barriers and contribute to destruction, shock effect, and/or illumination. PTP, Page 30.

BACK ELO 7

CORRECT



Lesson Exercise 7: Instructions

The following three questions will test your knowledge of the materials covered in ELO 7. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.

BACK NEXT

Rear-area activities are most lucrative targets for enemy _____ use.

A. artillery
B. nerve agent
C. NBC
D. smoke

BACK NEXT

_____ and _____ reduce the effects of the NBC on the battlefield.

A. Contamination avoidance and control
B. MOPP gear and protection
C. Cover and concealment
D. Flames and smoke

BACK NEXT

Once NBC weapons have been used, units implement contamination control that encompasses decisions to limit the spread of contamination and reduce or eliminate its effect on sustained operations.

A. False.
B. True.

BACK ELO 8

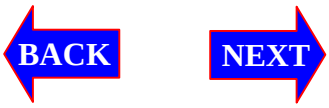
INCORRECT

The correct answer is C.

Rear-area activities are most lucrative targets for enemy NBC use. PTP, Page 30.

BACK NEXT

CORRECT



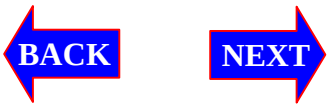
INCORRECT

The correct answer is A.

Contamination avoidance and control reduce the effects of the NBC on the battlefield. PTP, Page 31.

BACK NEXT

CORRECT



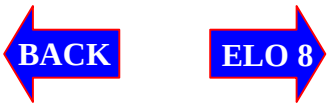
INCORRECT

The correct answer is B.

Once NBC weapons have been used, units implement contamination control that encompasses decisions to limit the spread of contamination and reduce or eliminate its effect on sustained operations. PTP, Page 31.

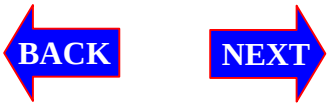
BACK ELO 8

CORRECT



Lesson Exercise 8: Instructions

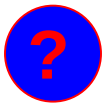
The following three questions will test your knowledge of the materials covered in ELO 8. There is only one correct answer for each item. When you answer each question, you will be given immediate feedback. If you answer any question incorrectly, study that part of the ELO again.



What personnel make up the chemical section of a maneuver battalion?

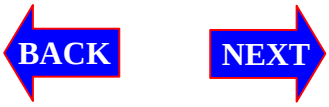
A. Chemical officer and NBC staff NCO.
B. Chemical officer, chemical NCO, and decontamination specialist.
C. Division chief of staff and chemical officer.
D. Special staff officer, S-3, and division chief of staff.

BACK NEXT



What personnel make up the brigade chemical section?

A. Chemical officer and NBC staff NCO.
B. Division chief of staff, chemical officer, and chemical NCO.
C. Decontamination specialist and division chief of staff.
D. G-3 and S-3.



Which of the following duties is part of the training operation for brigade personnel?

A. Coordinate and monitor battalion NBC defense training.
B. Determine training needs through staff visits and evaluations.
C. Obtain training support available from host nation resources.
D. Supervise and inspect subordinate command.

BACK SEC IV

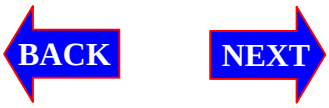
INCORRECT

The correct answer is B.

The maneuver battalion personnel consist of the chemical officer, chemical NCO, and decontamination specialist. PTP, Page 31.

BACK NEXT

CORRECT



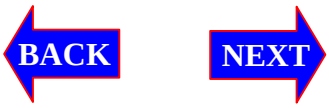
INCORRECT

The correct answer is A.

The brigade chemical section consists of a chemical officer and NBC staff NCO.
PTP, Page 33.

BACK NEXT

CORRECT



INCORRECT

The correct answer is B.

Determine training needs through staff visits and evaluations. PTP, Page 34.

BACK SEC IV

CORRECT