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COUNTER NBC OPERATIONS



AIR FORCE DOCTRINE DOCUMENT 2-1.8

Draft, 3 September 1999

This document complements related discussion found in Joint Publication 3-11, *Doctrine for Nuclear, Biological, Chemical (NBC) Defense*.

**BY ORDER OF THE
SECRETARY OF THE AIR FORCE**

**AIR FORCE DOCTRINE DOCUMENT 2-1.8
XX MONTH 1999**

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FOREWORD

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As stated in the *National Security Strategy*, the threat or use of nuclear, biological, and chemical (NBC) weapons is among the most alarming of all emerging threats to global security. NBC weapon use can be overt or covert, and the effects may be immediately evident or detected only after the passage of time. In all cases NBC weapons may adversely impact large numbers of people, civilian and military. In order for the Air Force to project combat power using its core competencies, it must be prepared to counter these weapons successfully. This requires a four-layered approach: proliferation prevention, counterforce, active defense, and passive defense. The integration of these concepts into aerospace operations will enable the aerospace forces of the United States to successfully operate despite confrontation with an adversary employing NBC weapons. Air Force Doctrine Document 2-1.8, *Counter NBC Operations*, provides a framework for understanding, planning, and executing this part of aerospace warfare.

TIMOTHY A. KINNAN
Major General, USAF
Commander, Air Force Doctrine Center

1 **INTRODUCTION**

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5 **PURPOSE**

6 This Air Force Doctrine Document (AFDD) provides doctrine for countering
7 nuclear, biological, and chemical (NBC) weapons and supports basic aerospace doctrine.

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12 **APPLICATION**

13 This Air Force Doctrine applies to all active duty, Air Force Reserve, Air
14 National Guard, and civilian Air Force personnel. This document is authoritative but not
15 directive; commanders are encouraged to exercise judgement in applying this doctrine to
16 accomplish their missions.

17
18 **SCOPE**

19 The need to counter the threat or use of NBC weapons applies throughout the
20 range of aerospace operations. Counter NBC operations range from deterring or
21 preventing an adversary from acquiring or using these weapons, to disrupting and
22 limiting an attack, or surviving and restoring operations if attacked. This document
23 integrates the Air Force approach to countering adversary NBC operations.

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1 **CHAPTER ONE**

2 **COUNTER NBC OPERATIONS**

Weapons of mass destruction pose the greatest potential threat to global stability and security.

A National Security Strategy for a New Century, 1998

3
4
5 **Overview**

6
7 The spread of nuclear, biological, and chemical (NBC) weapons and the means to
8 deliver them present a serious security threat to US forces, allies, and interests around the
9 world. Public attention has traditionally focused on nuclear weapons proliferation, but the
10 spread of biological and chemical weapons also poses a genuine threat to national and
11 international security. NBC weapons provide an adversary with asymmetrical means to
12 counter US conventional military superiority. Use of NBC weapons has the potential to
13 inflict large casualties on military and civilian populations, degrade the effectiveness of
14 friendly forces, and create serious political and psychological repercussions.

15
16 **Counter NBC operations are those activities taken to detect, deter, disrupt,**
17 **or destroy an adversary's NBC capabilities and to protect friendly forces from NBC**
18 **attack.** The main components of Counter NBC Operations are proliferation prevention,
19 counterforce, active defense, and passive defense. Commanders are responsible for
20 assessing and planning for the effects of an adversary's use of NBC weapons across the

1 full operational spectrum from peacetime engagement to full-scale war. This requires an
2 assessment of an adversary's intent and capability to employ NBC weapons. It also
3 requires commanders to identify the effects of NBC weapons on the ability of US and
4 friendly forces to prosecute a conflict and plan to counter such an attack if it occurs.

5
6 The Air Force's ability to deploy overwhelming force, apply highly-accurate
7 precision attack, and provide robust logistical support are important to the full range of
8 US military operations. These capabilities also make aerospace bases, personnel, and
9 systems potential NBC targets. An NBC attack can adversely affect the Air Force's core
10 competencies.

11
12 The NBC threat is not limited to situations outside of the United States. Use of
13 NBC weapons by nation-states or non-state entities against targets within US borders is a
14 possibility. Civilians and US military personnel may be targeted anywhere in the world,
15 even when not engaged in combat operations. An adversary's objective may be to gain
16 attention for a cause, retaliate for previous US actions, or erode public support and US
17 resolve for ongoing or future operations. Aerospace forces prepare to counter the NBC
18 threat by properly employing core competencies, prior planning, education, and training,
19 and by close coordination with the other military Services and civilian agencies.
20 Furthermore, a properly trained, equipped, and exercised force can deter an adversary
21 from choosing to employ NBC weapons.

22
23

1 **WEAPON CHARACTERISTICS**

2

3 **Nuclear**

4 Nuclear weapons and their effects are generally well known. The technologies
5 involved with the development and production of nuclear weapons are also well
6 understood. The greatest difficulty in creating a weapon is acquiring enough fissile
7 material—enriched uranium or plutonium, neither occurring in nature—to allow fission
8 to take place. Over the past decades, non-proliferation efforts have focused on
9 controlling the spread of these dangerous commodities. Despite efforts to prevent
10 proliferation, nuclear weapons material has found its way to several developing countries
11 and the potential exists for non-state entities hostile to the US and its allies to develop and
12 use nuclear weapons.

13

14 Aside from direct damage to personnel, equipment, and structures from blast,
15 heat, and radiation effects, nuclear weapons can cause massive damage and destruction to
16 electronic infrastructure. Employed to optimize electromagnetic pulse (EMP) damage, a
17 nuclear device may destroy or disable equipment and critical infrastructure while
18 minimizing direct casualties. Unprotected communications, computers, sensors, and
19 aircraft can be damaged or destroyed in an asymmetric attack that threatens the US
20 technological lead. This might be done with considerably less political impact than would
21 result from attacking a city or concentration of personnel directly and might be
22 considered by some groups to be comparable to the systematic destruction of a nation's
23 military capability by standoff precision weapons.

1

2 **Radiological**

3 Radiological dispersal devices (RDD) are a variation of nuclear weapons. An
4 RDD is any device, other than a nuclear explosive device, that disseminates radiation to
5 cause damage or radiation injury. Sources of this type material are spent fuel from
6 nuclear reactors and low-level radioactive materials such as medical or industrial wastes.
7 Some of these materials may be readily available in countries having lax control
8 standards for this type of waste. An RDD contaminates a wide area, causing casualties by
9 inducing radiation sickness. The device's effectiveness depends upon the type and
10 amount of radioactive material and its dispersion. The direct effects may be militarily
11 insignificant, but the political and psychological effects could destroy a coalition or
12 disrupt the deployment of combat forces.

13

14 **Chemical**

15 Due to the ease of their manufacture, almost any chemical, fertilizer, or pesticide
16 factory has the potential to make chemical weapons. Although they are easy and cheap to
17 make, chemical weapons are difficult to efficiently or surreptitiously deliver. Large
18 quantities may be needed to achieve mass casualties, but even limited use can have
19 devastating psychological effects sufficient to achieve strategic objectives. Chemical
20 threats include choking, blister and nerve agents as well as hazardous materials such as
21 toxic industrial chemicals.

22

1 **Biological**

2 Biological agents-- pathogens and toxins-- are potentially capable of spreading
3 disease to large segments of a target population, or they may be used to attack fuel
4 supplies, livestock, or crops. Pathogenic microorganisms enter the body through the
5 body openings (nose, mouth, etc.) or penetrate the skin and then multiply, eventually
6 causing disease by overloading the body's natural disease-fighting capabilities. Toxins
7 are poisonous by-products of microorganisms, plants and animals. Some toxins can be
8 synthetically produced. Toxins work by interfering with basic living functions such as
9 breathing or nerve-muscle control performance. Some of these weapons may be produced
10 using pharmaceutical or fermentation facilities, and small amounts may have widespread
11 effects.

12

13 **Delivery Methods**

14 NBC weapons can be delivered by various means. Developed countries have used
15 aircraft and artillery for decades. Newer delivery platforms of concern include ballistic
16 or cruise missiles. As the technology and industrial capacity necessary to design and
17 build these weapons continues to spread, potential adversaries may acquire them through
18 theft , purchase, or indigenous development. Surreptitious delivery means include
19 personnel, ground vehicles, watercraft, unmanned aerial vehicles (UAVs), or means as
20 simple as infected humans or animals. A state or non-state adversary can use any of
21 these methods; to counter them requires a robust set of defenses capable of meeting this
22 varied threat. Weapons effects on or near US bases and other targets of strategic value

- 1 may severely impact operations. Close cooperation between military and civil authorities
- 2 is vital to prevent delivery of NBC.
- 3

CHAPTER TWO

AEROSPACE POWER IN COUNTER NBC OPERATIONS

A balanced and integrated strategy of proliferation prevention, counterforce, active defense, and passive defense efforts is vital to counter the NBC threat across the full spectrum of conflict and enable the Air Force to bring its core competencies to bear to support commanders' objectives.

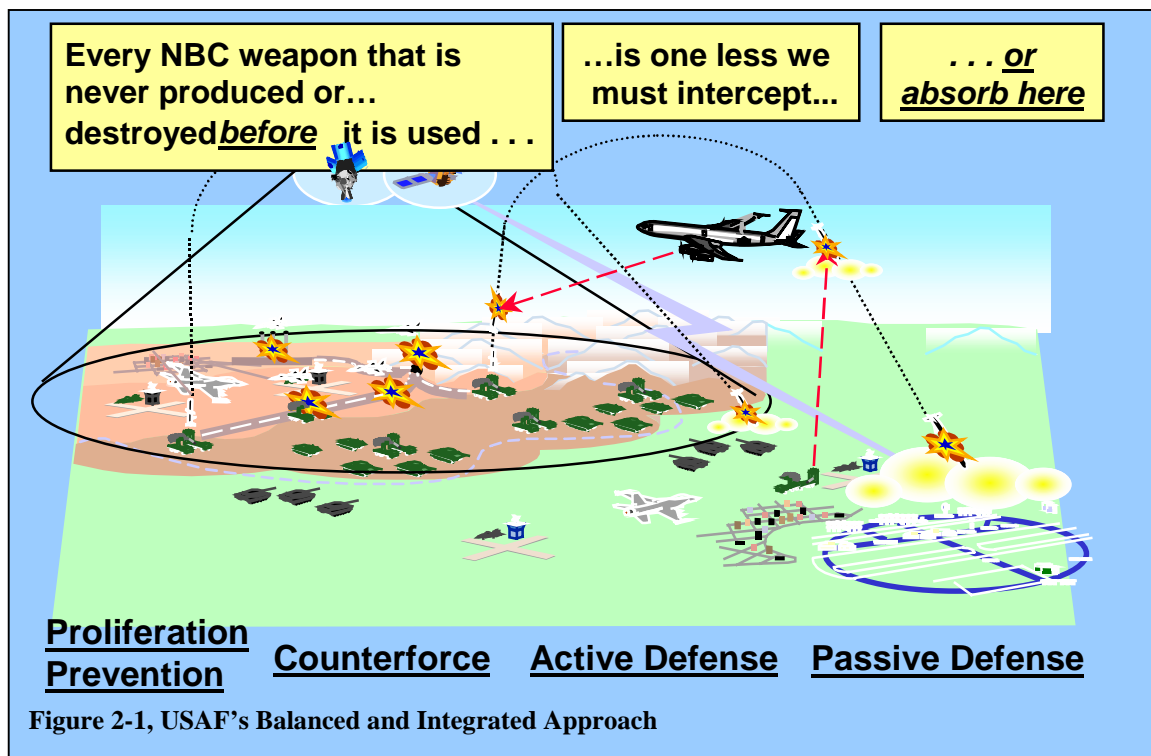


Figure 2-1, USAF's Balanced and Integrated Approach

As shown in figure 2-1, the first layer of counter NBC operations is to prevent or roll back the proliferation of NBC weapons through export controls and treaty agreements. The next component of this integrated strategy is to attack NBC weapons

1 and their associated delivery, production, and storage facilities prior to their use which
2 enables the joint force commander (JFC) to reduce the NBC threat to friendly operations.
3 Failing that, interception of conventional and unconventional delivery methods provides
4 the next layer of counter NBC operations. Finally, maintenance of a strong capability to
5 survive and operate when exposed to an NBC attack reduces the utility of NBC weapons.

6

7 Operations from fixed bases make counter NBC operations of paramount
8 importance. The vital strategic importance of aerospace systems to the full range of US
9 military operations makes bases, personnel, and systems potential targets for NBC
10 operations. NBC attacks can adversely affect the full range of aerospace operations. At
11 best, operations tempo will be reduced along with sortie rates and individual personnel
12 effectiveness as operations are degraded by individual protective equipment and
13 contamination control measures.

14

15 **MAJOR COMPONENTS OF COUNTER NBC OPERATIONS**

16

17 **Proliferation Prevention**

18 **Proliferation prevention means denying attempts by would-be proliferants to**
19 **acquire or expand their NBC capabilities.** This is accomplished by:

20

- 21 **✦** Providing inspection, verification, and enforcement support for nonproliferation
22 treaties and NBC control protocols
- 23 **✦** Supporting export control activities

1 ★ Assisting in the identification of potential proliferants before they can acquire or
2 expand their NBC capabilities

3 ★ If directed by the National Command Authorities (NCA), planning and conducting
4 attack missions during periods outside of hostilities

5

6 Aerospace power provides unique capabilities to detect the possession or
7 development of NBC weapons. For example, intelligence, surveillance, and
8 reconnaissance (ISR) systems enable the gathering of information on the development
9 and possible deployment of NBC weapons. The Air Force performs many inspection,
10 verification, and enforcement tasks with other service and government agencies.

11 Significant effort is needed to monitor research, development, testing, production, and
12 storage programs related to NBC agents, weapons, and delivery systems. Many of these
13 programs are hard to identify due to their integration into civilian industry. Ballistic and
14 cruise missile delivery systems deserve emphasis due to their capability to project beyond
15 state boundaries and to penetrate traditional defenses. Proliferation prevention activities
16 include support to the Treaty on Open Skies, Strategic Arms Reduction Treaty (START)
17 visits, and on-site inspections. A robust proliferation prevention effort can help
18 application of military force and reduce the likelihood of an attack on US civil or military
19 interests within or outside the United States.

20

21 **[Insert vignette such as Israel’s attack on Iraq’s Osirak nuclear reactor being used**
22 **for weapons Operation BABYLON in 1981]**

23

1 **Counterforce Operations**

2

3 **Counterforce operations destroy or degrade an adversary's offensive NBC**
4 **capability before it can be used against friendly forces.** Aerospace forces are ideally
5 suited for counterforce operations. Preempting an NBC attack, especially by missiles or
6 aircraft, often requires that operations be conducted on short notice over extended ranges
7 and with precision weapons. The speed, range, and versatility of aerospace forces enable
8 rapid reaction to changing situations, targets, and environments. Advanced technology
9 "smart" weapons make aerospace forces particularly suited to precise targeting with
10 minimal collateral damage. *(Note that the use of counterforce in this doctrine document*
11 *is not the same as the term defined in JP 1-02, "DOD Dictionary of Military and*
12 *Associated Terms").*

13

14 Targets are frequently mobile and dispersed, or are maintained in hardened and
15 deeply buried shelters and only vulnerable to direct attack for short periods of time.
16 Command and control procedures must be in place to allow quick reaction by aerospace
17 forces as targets are identified, and attacking forces may have to be maintained in a
18 heightened state of readiness such as airborne or strip alert. ISR systems must focus on
19 threat areas and collection priorities adjusted to facilitate rapid location of NBC elements.
20 The release of NBC agents during a counterforce attack can cause extreme collateral
21 damage and must be considered in the targeting process. A wide variety of forces and
22 weapons can be used to conduct counterforce operations, from wide area munitions for
23 attacks on dispersed terrorist or military installations, to precision, earth-penetrating

1 weapons for hardened and buried production and storage facilities. Special operations
2 forces (SOF) and the air components of the other Services also play significant roles in
3 finding, targeting, and attacking counterforce targets.

4

5 **Active Defense**

6 **Active defense encompasses actions to destroy enemy NBC weapons and**
7 **delivery vehicles while en route to their targets.** This activity comprises defensive
8 operations against aircraft, ballistic missiles, and cruise missiles. Active defense also
9 encompasses force protection against SOF, unconventional warfare, and terrorists
10 employing NBC weapons. The goal is to weaken or avert the adversary's strike to the
11 degree that passive defenses can counter the effects of the NBC weapons on friendly
12 operations. Commanders should emphasize destroying inbound weapons as far as
13 possible from friendly forces or territory. Active defense should be integrated with the
14 Air Force expeditionary capability. This means that tracking, cueing, communications,
15 and active defense systems must be easily deployable and capable of operating in a
16 variety of environments.

17

18 **Passive Defense**

19

20 **NBC passive defense measures improve the capability of personnel to survive**
21 **and sustain operations in an NBC environment.** Despite the effectiveness of
22 prevention, counterforce, and active defense, some weapons may reach their targets.
23 Commanders assess the threat in relation to the mission and determine appropriate

1 passive defense measures. For example, preventive medicine (PVNTMED) or public
2 health services (PHS) teams, through the theater surgeon, support commanders by
3 conducting environmental testing and reviewing medical records to identify indications
4 of NBC use.

5

6 **Passive defense consists of contamination avoidance, protection, and**
7 **contamination control.**

8

9 **✪ Contamination Avoidance.** As
10 defined by the Joint Chiefs of Staff (JCS),
11 avoidance means taking actions to
12 minimize the impact of an NBC attack
13 and to reduce the effects of the NBC
14 hazard. Detection enables early warning
15 whereas identification provides the

USAF NBC avoidance includes:

- **Detection**
- **Identification**
- **Prediction**
- **Marking**
- **Dispersal**
- **Relocation or rerouting.**

16 information necessary for a tailored response. Validated detection and identification
17 standards and operational requirements are necessary to support sustained operations.

18

19 Throughout the full spectrum of conflict, from peacetime to major theater war
20 (MTW), Air Force aerospace forces will normally operate from fixed locations. NBC
21 detection includes the use of NBC point detection, standoff detection,
22 counterintelligence, medical intelligence and risk assessment, human intelligence
23 (HUMINT), signals intelligence (SIGINT), specialized teams, and operational and
24 national intelligence assets.

1

2 **★ Protection.** When contamination cannot be avoided, protection provides the force
3 with survival measures to operate in an NBC environment. Protection is afforded by
4 individual protective equipment, collective protection and physical shelters, toxic free
5 areas, hardening, covering, and medical countermeasures (e.g., vaccinations, prophylaxis,
6 exposure assessment). A proper level of protection based on mission impact is essential.

7

8 The joint task force (JTF) or installation commander may choose to increase or
9 reduce the level of protective posture based upon mission requirements and the exact
10 nature of a threat. Certain threats are more persistent than others and may require
11 different types/levels of protection. For example, if the nature of the threat is biological,
12 only respiratory/eye protection may be required and the added encumbrance of full
13 protective equipment can be avoided. Similarly, certain chemical agents may be primarily
14 respiratory threats. Therefore, the commander can optimize the personnel protection
15 balance based upon proper identification of the threat agents and amounts used.

16

17 **★ Contamination Control.** Contamination control is a combination of standard
18 disease prevention measures and traditional CW contamination avoidance and
19 decontamination measures. This includes procedures for reducing, removing, or
20 rendering harmless, the hazards resulting from the contamination.

21

22 **OTHER CONSIDERATIONS.**

1

Three types of decontamination:

- **Immediate** - those actions done by personnel on themselves or their personal equipment.
- **Operational** - those actions required to prevent mission degradation due to contamination.
- **Thorough** - those actions required to remove or neutralize contamination to prevent further cross contamination (e.g. medical patient decontamination).

2

3 **Integration.** Effective battle management at strategic, operational, and tactical levels is
4 needed to coordinate counter NBC actions and integrate efforts across disciplines.

5 Commanders integrate personnel and resources from diverse specialties and assemble
6 plans and intelligence to defeat NBC threats. Each major component of counter NBC
7 operations is dependent upon the others to reduce adversary capability and maximize
8 effectiveness. This is accomplished through:

9

10 ✦ **assessment** - NBC intelligence preparation of the battlespace, friendly courses
11 of action, environmental/health threat information, and NBC vulnerability
12 analysis.

13 ✦ **situational awareness** – knowing the current situation and assessing the
14 future situation through integration of sensor, networks, reconnaissance,
15 surveillance, weather, terrain, operations, and intelligence information.

16

1 ✳ *maximizing force effectiveness* - optimizing resource allocation decisions and
2 protective action measures through the use of risk assessment and decision
3 support tools.

4
5
6 **Host Nation Support.** Passive defense requirements for host nation and coalition
7 support personnel are important considerations during deliberate NBC planning and
8 implementation processes.

9
10 **Noncombatant Evacuation Operations.** Passive defense plans should include non-
11 combatant personnel protection.

12
13 **Terrorist NBC Threat Response.** NBC weapons threaten domestic and international
14 communities on and near US facilities. The Air Force may be required to provide
15 support to surrounding US and foreign communities.

16
17 **RISK CONSIDERATIONS**

18
19
20 Threats can come from multiple sources. They can be unexpected and include a
21 broad range of tactics from clandestine operations to large-scale attacks. They may be
22 intended to only hinder operations or they may be designed to cause massive casualties
23 and force withdrawal. Determining the risk involved requires a concerted intelligence
24 effort against potential aggressors. This is essential to devising a synergistic counter
25 NBC operation. It is also vital to determining the priority trade-offs among types of

1 mission equipment deployed in the early stages of operations. For example, deploying
2 robust active defense and passive defense capabilities could displace equipment needed
3 for functions such as counterair, counterland, strategic attack, and impact survivability of
4 personnel. Risk analysis, along with many of the other considerations, will help
5 determine how to best apply the Air Force core competencies to the NBC threat.

6

7 **CORE COMPETENCIES AND COUNTER NBC OPERATIONS**

8

9 The speed, flexibility, and the global nature of its reach and perspective
10 distinguish the Air Force's execution of its core competencies from the other Services.
11 The core competencies of the Air Force make it uniquely qualified to counter an
12 opponent's use, or threatened use, of NBC weapons in or through the use of the
13 aerospace environment. The proper integration of the core competencies into the JFC's
14 campaign plan can bring about the elimination or delay of employment of the adversary's
15 NBC weapons. If aerospace forces fail to eliminate the threat prior to employment or fail
16 to intercept delivery systems, an enemy's use of NBC weapons may severely degrade the
17 Air Force's ability to fully support the JFACC's operation. Conducting counter NBC
18 operations may place significant additional burdens on aerospace personnel, equipment,
19 and the logistics system.

20

21

22 **Air and Space Superiority**

23

24 Air and space superiority provides freedom to attack, freedom to maneuver as
25 well as freedom from attack. It is a necessary first step to all other military operations
26 including those to counter a NBC capability.

1

2 **Precision Engagement**

3

4 Precision engagement is the ability to command, control, and employ forces to
5 cause discriminate strategic, operational, or tactical effects. Recent advances in precision
6 targeting, accurate weapons, and rapid global communications when combined with the
7 traditional aerospace characteristics of range and speed have significantly advanced Air
8 Force precision engagement capabilities. This is especially valuable in countering time
9 sensitive NBC targets and in destroying buried or hardened facilities. Precision
10 engagement is also vital in identifying and targeting terrorist activities while limiting
11 collateral damage.

12

13 **Information Superiority**

14

15 Information superiority is that degree of dominance in the information
16 domain permitting the conduct of operations without effective opposition. Fast-paced
17 operations countering enemy NBC capabilities require near real-time, precise information
18 that can be passed to offensive and defensive operators in time to achieve the greatest
19 effects, and used by base personnel to conduct effective passive defense operations. At
20 the same time, the enemy must be denied accurate targeting information and operational
21 intelligence.

22

23 **Global Attack**

24

1 Global attack represents the unique ability of Air Force aerospace systems to
2 attack a wide range of strategic, operational, or tactical targets rapidly and persistently
3 with various munitions anywhere on the globe. The range, speed, and versatility of
4 aerospace forces make them ideal for operations to counter an adversary's NBC
5 capabilities. Additionally, the threat of rapid global attack reinforced by information
6 superiority can play a strong role in proliferation prevention activities, deterring or
7 inhibiting the development and use of NBC weapons.

8

9 **Rapid Global Mobility**

10

11 Rapid global mobility refers to the timely movement, positioning, and
12 sustainment of military forces and capabilities through air and space, across the range of
13 military operations. Deploying appropriate forces in a timely manner and then protecting
14 them from threats is paramount to effective operations and to achieving an operational
15 advantage. Rapidly providing the in-theater systems and facilities for NBC counterforce,
16 and active and passive defense is crucial to any operation in such an environment.

17

18 **Agile Combat Support**

19

20 Agile combat support refers to the need of supporting an aerospace force that is
21 poised for response to global tasking. The support system must be agile enough to
22 provide needed weapons, supplies and facilities on very short notice and also be able to
23 reduce the targetable "footprint" of deployed forces to a minimum. This is especially

1 important to counter NBC operations as they are likely to be short notice and may require
2 the full spectrum of counterforce and active and passive defense capabilities.

3

CHAPTER THREE

COMMAND AND CONTROL

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Command and control (C2) for counter NBC operations will vary depending upon the type of operation, the nature of the threat, and the set of capabilities applied to counter the threat. Counter NBC operations may be single Service, joint, or combined and may involve US and foreign civil authorities. This demands flexibility and connectivity between strategic, operational, and tactical command and control (C2) systems.

The delivery systems for NBC weapons may be difficult to detect, and, if employed, will present short warning times. The ability to employ offensive and defensive operations against this threat depends on a C2 structure that enables rapid reaction throughout the battlespace.

Offensive counter NBC operations can take place as part of an ongoing military operation or as part of a distinct joint task force (JTF) established for the purpose of countering an NBC threat. For example, during Desert Storm allied forces attacked biological warfare facilities as part of that operation. In the future, the National Command Authorities (NCA) may require a JTF for the sole purpose of planning and conducting a limited strike against a known NBC plant in a hostile country. Defensive counter NBC operations must be integrated into the day-to-day operations of aerospace forces. Active defense—missile defense and force protection—and passive defense C2

1 requirements should be integrated into the overall aerospace command and control
2 system.

3

4 **Command Authority**

5

6 Counter NBC operations should be integrated into normal command
7 relationships in peace or war. Aerospace forces may operate under a joint force
8 commander (JFC) who exercises combatant command or operational control over the
9 joint force. The joint force C2 support system gives the JFC the means to exercise that
10 authority and direct assigned and attached forces to accomplish the mission. The JFC
11 may appoint a joint force air component commander (JFACC) to direct aerospace
12 operations, and the JFC will determine the priority for counter NBC targets in the overall
13 campaign plan. The JFACC will integrate counter NBC operations into his master air
14 attack plan and allocate sorties for counter NBC operations (though they may be
15 designated OCA, DCA, etc). The area air defense commander (AADC), who normally is
16 the JFACC, will coordinate the aerospace operations part of active defense. The JFC may
17 appoint a joint rear area coordinator (JRAC). The JRAC is responsible for coordinating
18 the overall security of the joint rear area and will coordinate force protection—to include
19 passive defense—requirements across joint components. Aerospace commanders retain
20 responsibility for force protection of their units, to include active defense (unconventional
21 delivery, antiterrorism) and passive defense.

22

23 The JFACC may establish a theater missile defense (TMD) cell to coordinate
24 offensive and defensive operations against ballistic missiles. The TMD cell will need to

1 closely coordinate with the JFC and AOC conducting ongoing counterforce, active
2 defense, and passive defense operations to degrade an adversary's NBC weapons delivery
3 capability. A warning and reporting network linking ISR systems with counterforce,
4 active defense, and passive defense assets is required. This enables launch detection,
5 tracking, engagement, impact prediction, and passive defense preparation. This network
6 must provide rapid warning and reporting throughout the battlespace.

7
8 Force protection requires close coordination with all command and control
9 components of counter NBC operations. Security forces, who may be the first to discover
10 an NBC attack on an air base, can provide critical information to medical, intelligence
11 and others in order to begin to control the attack, minimize casualties, and continue
12 operations.

14 **Operations on United States Territory**

15
16 Counter NBC operations on US territory will be conducted by civilian agencies
17 with support from military and aerospace forces. The nature of the operation, civilian
18 capabilities, and the severity of the threat will guide the required support and command
19 relationships. Therefore, Air Force personnel should expect to work with personnel from
20 US Government agencies, state and local governments, and other US Services. Within
21 CONUS, the US Army's Director of Military Support is the executive agent for DOD.
22 Outside CONUS, but on US territory, the appropriate geographic commander-in-chief
23 (CINC) is the executive agent for DOD and normally will assign a JFC to control DOD
24 support to civil authorities.

1 When directed by the NCA, the US Commander-in-Chief Atlantic Command
2 (USCINACOM) within CONUS and US territories, or the appropriate geographical
3 CINC (for non-contiguous states or territories) will establish and deploy a response task
4 force (RTF). The RTF will support the designated lead federal agency in crisis and
5 consequence management within the designated joint operations area (JOA). Aerospace
6 forces that are a component of an RTF should expect to work with personnel from US
7 government agencies, state and local governments, and other Services.

8

9 The US has assigned primary authority to the Federal Bureau of Investigation
10 (FBI) and the Federal Emergency Management Agency (FEMA) to conduct counter NBC
11 operations on the territory of the US There are two phases of domestic counter NBC
12 operations: crisis management and consequence management.

13

14 ★ **Crisis management** includes measures to identify, prevent, and respond
15 to an attack. The FBI, through the Attorney General, has the lead responsibilities
16 during crisis management. Aerospace forces may be requested to provide
17 mobility, command and control, and force protection, including passive defense
18 support.

19

20 ★ **Consequence management** includes measures to provide emergency
21 relief to governments, individuals and businesses in response to an incident
22 involving NBC weapons or devices. Primary authority for consequence
23 management rests with the state governments who may draw upon National

1 Guard assets during the initial stages. FEMA leads the federal agencies, including
2 DOD, through the Attorney General. Aerospace forces may be requested to
3 provide mobility, command and control, and force protection, including passive
4 defense support.

5
6 In the event of an NBC incident on a military base in US territory there will likely
7 be parallel lines of command over concurrent aspects of the operation. The installation
8 commander will retain responsibility for ongoing military operations while the FBI
9 assumes command over the crime scene. The installation commander may integrate
10 military forces into the FBI response team and provide assistance such as technical
11 expertise, logistics support, and manpower for the entire operation. Military forces will
12 remain under military command at all times, and may provide or receive supplemental
13 support, as appropriate.

14

15 **Coordination with Other Services, Civilian Agencies, Coalition Partners and Host**
16 **Nations**

17

18 The Air Force must be prepared to conduct counter NBC operations in concert
19 with other Services, civilian agencies, coalition partners, and host nations. Often these
20 entities have operational capabilities and equipment or, conversely, weaknesses that
21 could play a large factor in the Air Force's ability to survive and fight through an NBC
22 attack. Clarifying responsibilities in advance will reduce the potential for confusion in the
23 aftermath of an NBC attack. Developing a thorough understanding of opportunities and

1 capabilities is critical. Commanders should establish working relationships, remove
2 barriers to sharing information, understand what other entities provide, and resolve
3 equipment interoperability issues. JP 3-08, *Interagency Coordination During Joint*
4 *Operations*, as well as JP 3-16, *Joint Doctrine for Multinational Operations*, address
5 coordination issues in detail, though they need to be tailored to fit the counter NBC
6 mission.

7

8 **Support to Civilian Agencies and Coalition Partners**

9

10 The commander should make every effort to coordinate Air Force efforts with
11 federal, state and local agencies, international organizations, and non-government
12 organizations (NGOs). Due to the asymmetrical nature of NBC warfare, close
13 coordination with civilian counterparts becomes particularly critical. An adversary may
14 attempt to undermine an operation or host nation support by targeting civilian
15 populations, coalition partners and allies, or relief workers. Advance coordination with
16 civilian agencies will minimize vulnerabilities and facilitate rapid response. Additionally,
17 overseas commands have special responsibilities for US citizens and civilian assets in
18 their geographical areas. Responsibilities such as noncombatant evacuation operations
19 (NEOs) and other support to US citizens can be streamlined by establishing close
20 relationships with civilian agencies.

21

22 **Host Nation Considerations**

23

24 Counter NBC operations must be coordinated in advance with host nations (HN)
25 and coalition partners. Although the Air Force will not rely on HN support to provide a

1 capability to defend its personnel against NBC attack, HN support can be used to
2 augment Air Force capabilities.

3

4 Effective coordination among Air Force and host nation activities enhances
5 overall base operations and preparations for an NBC attack. The Air Force should
6 develop agreements with the HN, in coordination with the staff of the regional CINC and
7 the Department of State, to identify and improve coordination, logistics, medical access,
8 and jurisdiction concerns. These procedures should be noted in base plans (where
9 applicable).

10

1 **CHAPTER FOUR**

2 **PLANNING AND SUPPORT OPERATIONS**

3
4 **GENERAL**

5
6 Sustaining operations in an NBC environment requires a broad range of planning
7 and support considerations. These include: targeting, strike planning, ISR, logistics,
8 aeromedical evacuations, health service, and legal issues in addition to coordination
9 considerations with civilian agencies, coalition members and host nations. All of these
10 factors are critical to the Air Force's capability to counter the threat or presence of NBC
11 weapons. Proliferation prevention, counterforce and active defense may not stop every
12 NBC attack or eliminate a weapon without releasing NBC contamination. Commanders
13 should carefully consider the potential collateral consequences of proliferation
14 prevention, counterforce and active defense. Targeting and strike planning should use all
15 sources of intelligence to ensure minimal collateral NBC effects. Commanders must
16 ensure counter NBC plans are ready, comprehensive, and exercised.

17
18 **TARGETING CONSIDERATIONS**

19
20 **Pre-strike Planning**

21 Before strikes can be made against any target, a commander needs accurate
22 intelligence, surveillance, and reconnaissance (ISR) data. Information is needed on
23 target characteristics, such as NBC agent production, storage, weaponization, and

1 delivery sites. This information should be used to avoid unplanned NBC agent release,
2 and to plan the correct force mixture to neutralize the target.

3

4 NBC targets can include production, storage, weaponization, and delivery sites.
5 Targeting must consider the type of agents and their containment within facilities and
6 vehicles, proximity to population centers, adversary active and passive defenses to
7 include anti-aircraft weapons systems and facility hardening. Large-scale research,
8 development, and production may be detected through the construction of the facilities,
9 which can be investigated through human and sensor means. Other factors include law of
10 armed conflict (LOAC) and its relation to innocent civilians as well as the possible
11 effects to Allied and US forces. All of these target considerations will affect the mission
12 planning for the correct force mixture to deliver the right weapon to defeat NBC
13 capability with minimum collateral effect.

14

15 **Intelligence, Surveillance, and Reconnaissance (ISR)**

16

17 ISR is a key element of counter NBC operations. ISR seeks to detect, identify,
18 and track the development and deployment of NBC weapons by both state and non-state
19 actors. This includes the use of national and theater systems to collect and analyze data,
20 and disseminate the results. The unique signature of NBC weapons, devices, and
21 materials enables the use of specialized detectors to complement standard ISR platforms,
22 such as JSTARS, AWACS and satellites. Constant medical surveillance looking at local
23 disease incidence may reveal sources of large-scale biological or chemical production.

1 However, small-scale and portable programs will be more difficult to detect and
2 investigate, which may require shorter and more time-urgent methods.

3

4 ISR supports all aspects of the counter NBC mission. In terms of proliferation
5 prevention, ISR monitors the development of NBC weapons allowing the international
6 community to take steps preventing the further development and deployment of NBC.
7 ISR is also a critical supporting component of counterforce. A commander must have
8 accurate ISR data to determine the targets, including type of targets, characteristics,
9 proximity to population centers, and defenses. In terms of active defense, ISR systems
10 play a vital role in detecting, tracking, and warning of air and missile attacks, and may
11 help identify NBC weaponized missiles. Additionally, ISR needs to provide unit
12 commanders with an assessment of conventional and nonconventional capabilities that
13 may be used against friendly personnel. For units within US territory, domestic law
14 enforcement and other agencies that track ongoing criminal activity will probably provide
15 this information. Finally, ISR supports passive defense by providing information on the
16 threat, early warning, and other information vital to a commander's ability to decide how
17 best to protect the base.

18

19 **Collateral Effects**

20

1 The release of NBC agents may be a direct result of proliferation prevention
2 interdiction, counterforce, and active defense operations. Civilians, any host nation
3 population, allied and US military personnel can be affected. As a result, all strikes
4 against NBC targets need to be carefully planned and coordinated.

6 **DEPLOYMENT/REDEPLOYMENT CONSIDERATIONS**

8 **Logistics.**

9 NBC logistic support requirements should be based on the most current threat
10 assessments. Complete protection packages require significant airlift capability.
11 Consider using prepositioned assets, equipment carried by deploying units, consumables
12 (i.e. Individual Protection Equipment (IPE), filters, etc.). The level of mission essential
13 consumables must be added to the logistics flow in a timely manner. Lists of required
14 materiel should be visible to logistics planners to reduce movement of equipment into or
15 out of a NBC environment. Retaining all onsite NBC protective equipment when teams
16 redeploy will reduce transportation support for sustained operations. The support system
17 must be agile enough to provide needed weapons, supplies and facilities on short notice
18 and also able to reduce the targetable “footprint” of deployed forces to a minimum. This
19 is especially important to counter NBC operations as they are likely to be short notice and
20 may require the full spectrum of counterforce and active and passive defense capabilities.

22 **Contract Airlift.**

23 Civil Contract and the Civil Reserve Air Fleet (CRAF) will not plan to operate in
24 a contaminated environment.

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Transload.

If circumstances preclude civil/CRAF aircraft from operating in a theater, a transload location may need to be identified where civil cargo/passengers may be transferred to alternate transportation means (sea, rail, intratheater, etc.) for onward movement. Additionally, if a significant number of military airlift aircraft become contaminated, another version of a transload operation should be considered. This transload operation is divided into clean, exchange, and contaminated zones. Cargo and passengers are off-loaded from clean aircraft in the clean zone, relocated to the exchange zone, and finally reloaded onto a potentially contaminated aircraft in the contaminated zone. Personnel will have to assume appropriate Mission-Oriented Protective Posture (MOPP) level prior to entering the exchange and contaminated areas. These transload operations will be very manpower and equipment intensive since two separate cargo and passenger operations occur simultaneously at one location.

Decontamination Standards.

Since internationally recognized scientific standards and established legal requirements for acceptable decontamination levels have not been established, some allied/friendly nations may deny transit rights. Similar problems within the US also exist and may require the identification of remote airfields for the purpose of decontaminating, weathering, or destroying the effected aircraft.

1 **Mortuary Affairs.**

2 Contaminated remains will not be allowed on board military aircraft or AMC-
3 directed/supported airlift. The remains must be temporarily interred or decontaminated
4 before they can be transported, in accordance with Joint Publication 4-06, *Joint*
5 *Tactics, Techniques and Procedures for Mortuary Affairs in Joint Operations.*

6

7 **SUSTAINING OPERATIONS**

8

9 **Protective Posture and the assumption of risk**

10

11 The JFC, JRAC, COMAFFOR or installation commander may choose to increase
12 or reduce the level of protective posture based upon mission ops tempo and the exact
13 nature of the threat at the time. Certain threats are of a more persistent nature than others
14 and require certain types/levels of protection. For example, if the nature of the threat is
15 biological in nature, only respiratory and eye protection may be required and added
16 encumbrance can be avoided. Similarly, certain chemical agents may be primarily
17 respiratory threats or, conversely, only skin contact threats. Based upon proper
18 identification of the threat agents and amounts, the commander can optimize the balance
19 between the pace of operations and personnel protection.

20 **[Vignette that discusses]**

21

22 The use of increased protective postures can mean the substitution of one hazard
23 for another. NBC protective ensembles are, unfortunately, hot and bulky. Wearing them
24 in hot climates increases the likelihood of casualties due to heat stress and related

1 complications. Even if temperature is not a concern, hearing and speaking is degraded
2 while wearing the mask and hood. A risk-benefit analysis is essential when considering
3 MOPP level.

4
5 A commander must realize protective equipment does not completely protect
6 personnel. Not everyone is protected at the same levels by the IPE. Protective gear and
7 actions are not perfect. A working understanding of how contaminants work and their
8 exposure characteristics is paramount to protecting personnel and sustaining operations.

9

10 **HEALTH SERVICE SUPPORT OPERATIONS**

11

12 NBC weapons present medical challenges unique to the counter NBC mission.
13 Air Force Medical Service (AFMS) is responsible for establishing medical plans,
14 policies, and programs; obtaining and allocating medical resources; and evaluating
15 medical operational capabilities. Activities range from active medical surveillance,
16 aerospace medicine, preventive medicine, clinical analysis, and risk management. The
17 goal of the AFMS is to help identify possible NBC threats and be prepared to mobilize,
18 deploy, and operate in response to a range of threats and to provide quality medical
19 support and health care to Air Force operations.

20

21 AFMS should be prepared, trained, and organized to meet combat and combat
22 support requirements despite the complicating presence of NBC weapons and their
23 effects. The following AFMS missions apply to counter NBC operations.

1

2 **Medical Intelligence**

3

4 The Armed Forces Medical Intelligence Center (AFMIC) advises the theater
5 surgeon of the medical threats by evaluating a potential adversary's NBC capabilities.
6 Medical intelligence should encompass indigenous and enemy threats; a concise
7 description of all national medical resources in the deployment area, to include
8 availability and capabilities of host nation, joint, or coalition-held medical assets; the
9 effects of operating in MOPP. Constant medical surveillance looking at local disease
10 incidence may also reveal and identify sources of large-scale chemical and biological
11 production facilities by the effects caused by possible leakage or other by-products. The
12 theater surgeon can then advise the commander of appropriate actions required permitting
13 his personnel to effectively and safely function in the affected theater of operations.

14

15 **Casualty Management**

16

17 Air Force medical providers must be trained to perform medical management of
18 NBC casualties. In an NBC environment, limited medical assets will be quickly
19 exhausted. Addressing supplies, logistics and personnel is a priority. Medical treatment
20 of casualties is difficult in IPE, and medical personnel require protected medical facilities
21 to effectively conduct medical operations. Mass casualty plans should be formulated.

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The Effects of NBC Agents on Health Service Support Operations

The effects of most chemical and biological warfare (CBW) agents can be prevented through immunization, pre- and post-exposure chemoprophylaxis, and protective clothing. These measures help deny access of agents to lungs, digestive tract, and skin. Communication between line and medical personnel is critical in assessing potential environmental or other NBC exposure risks. Once NBC has been used, identification of agents is critical to further operations. Education, training, and effective exercises play a big part in countering the affects of NBC agents.

★ **Protection.** NBC exposure may affect a casualty’s access to medical care regardless of medical condition. To maintain effectiveness of medical personnel and facilities, patients must be decontaminated prior to receiving treatment at the medical treatment area.

★ **Detection.** Threat information on potential use of NBC weapons/agents is important for planning and executing health service support (HSS) operations. Systems must be available to detect NBC agents and medical personnel must be trained to use them, but in their absence, agents are recognized and identified by symptoms, physical findings and the tracking of disease outbreak. Medical personnel must be educated and trained regarding the signs and symptoms of NBC agents. Early signs and symptoms of most agents are identical or similar to

1 those of many common diseases. PVNTMED and PHS teams perform
2 environmental and other risk assessments or testing, and review medical treatment
3 logs to help identify possible trends indicating NBC usage or exposure.

4
5 **★ Decontamination.** Effectiveness of decontamination procedures is
6 directly proportional to the time lapse between initial contamination and removing
7 the NBC agent from an individual. Initial management and treatment of
8 contaminated casualties varies with the tactical situation and nature of agent.
9 Plans must be available to deal with possible scenarios.

10 11 **Aeromedical Evacuation**

12
13 Aeromedical evacuation (AE) doctrine is to “evacuate and replace” casualties;
14 however, NBC conditions complicate this process. Potentially contaminated patients
15 must be decontaminated before entering the AE system unless the theater and
16 USTRANSCOM CINCs direct otherwise. Decontamination and processing procedures
17 must be in place to prevent and assure appropriate NBC agent protection for patients,
18 aircrew, and aircraft. A variety of medical decontamination teams identify and neutralize
19 contaminants and perform early diagnoses to protect AE crew members and other
20 patients. Once patients are externally decontaminated, further AE decisions are based
21 upon actual or suspected clinical diagnosis and patient condition(s). AE and medical
22 personnel and commanders must apply specific control measures as documented in joint,
23 Service, NATO, or other NBC doctrine, field manuals, or guidelines.

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Many NBC casualties may be safely evacuated. Biological warfare (BW) casualties can be evacuated by using basic infection control guidelines. Others pose significant challenges. Evacuating potentially contaminated patients requires approval of the destination country, over-flight privileges, and approval of any country where the aircraft will land for servicing or where patients will remain overnight. (*Note: Countries from whom approval is sought are bound by Article 212 of the Geneva Conventions for the Amelioration of the Condition of the Wounded and Sick in Armed Forces in the Field (1949) to ensure humanitarian treatment to wounded and sick.*) This should include approval under most circumstances of transit of those injured by exposure to biological toxins. Coordination between the theater CINC, USCINCTRANS, USTRANSCOM/SG and the Department of State is required for such movements.

LEGAL ISSUES

Use of NBC weapons by an adversary could have significant consequences in terms of legal ramifications in the international community. Commanders need to know that the US Government will require evidence and specimens in order to start the appropriate international actions and to determine the appropriate US reactions. An adversary may deny having used NBC weapons. Collecting specimens, recording events, and establishing formal legal chain-of-custody for all evidence is required. Similarly, the commander needs to understand the potential legal ramifications of any decision that could result in collateral damage and understand the procedures for making such

- 1 decisions. During operations, the commander and staff should have access to and seek
- 2 legal advice as needed.
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CHAPTER 5

EDUCATION, TRAINING AND EQUIPMENT

Education and training, supported by realistic exercises and wargames, are vital to ensure the Air Force can conduct counter NBC operations. Combat forces operating from CONUS and overseas forward deployed air bases can maintain sortie generation rates and support operations only if Air Force personnel understand NBC threat environments and have honed the skills required for counter NBC operations.

EDUCATION

A key aspect of ensuring that AF personnel have the requisite knowledge to perform the counter NBC mission is a quality education that teaches personnel to function across the spectrum of military operations, regardless of environment. The goal of education must be to ensure that all Air Force personnel understand the principles, threat environment, agent characteristics, and appropriate actions to take to counter the NBC threat. Success in counter NBC operations requires the active participation of all members of the Air Force and thus, all must understand the nature of operating in the NBC environment. Air Force personnel with responsibilities for counter NBC functions should also understand the capabilities possessed by civilian and sister Service units.

Formal education on counter NBC should be given at all levels of an airman's career, regardless of position or rank. In addition, commanders require sufficient education to ensure effective decision-making in an NBC environment.

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TRAINING

Another aspect of preparing individuals to function in an NBC environment is training individuals, units, and staffs to a high level of counter NBC proficiency. Training at all levels, from basic military training to unit training should include:

- ★ Individual/personal protection, collective protection, and in/out processing
- ★ Basic passive defense measures to ensure base defense, survival, and recovery; working knowledge of how the air base should function cohesively to survive and operate in an NBC environment.
- ★ Active defense training
- ★ Counterforce activities such as sortie generation, identifying and destroying NBC targets.

All personnel should have the requisite skills to perform in an NBC environment, and must understand how to help their unit survive and operate in that environment.

Accession Training

Accession training prepares members for service by providing indoctrination to the military culture, organization, and mission. The pervasive nature of the NBC threat requires that basic training include a review of the NBC threat, and discussion of the relevant combat skills needed to defend and operate in an NBC environment. The NBC

1 threat exists at every assignment location, so indoctrination should underscore the fact
2 that countering the NBC threat is everyone's responsibility.

3

4 **Operational Training**

5

6 Operational training must build on the basics taught in accession training to
7 provide the necessary technical skills to be a functional participant in counter NBC
8 operations. Operational training may also include specialty training to help conduct
9 counter NBC-specific functions or skills to augment functional groups primarily
10 responsible for NBC defense.

11

12 **Continuation or Recurring Training**

13

14 Continuation or recurring training maintains and refines skills necessary to
15 perform the counter NBC mission. Since continuation or recurring training sharpens
16 knowledge of counter NBC functions and operations, this type of training must meet the
17 highest standards. It will provide the means by which Air Force personnel learn about
18 changes in counter NBC policies and procedures. Additionally it will prepare them for
19 increased responsibility, to include training others, leading forces, and planning counter
20 NBC operations.

21

22 Commanders will ensure their units are trained and able to perform in NBC threat
23 environments. Continuation training enables a commander to assess organizational

1 capabilities and to maintain the unit's ability to survive and operate in NBC threat
2 environments.

3

4 **EXERCISES AND WARGAMES**

5

6 Exercises should include a realistic NBC element and that participants are
7 required to demonstrate their skills in personal protection, performing wartime functions,
8 and working together as an integrated unit in a NBC contaminated area. An exercise
9 should emphasize all aspects of operations in an NBC environment including command
10 and control, planning, logistics, medical response, force protection, and individual and
11 collective protection. Where possible, Air Force units should also conduct joint and
12 coalition counter NBC exercises to develop and improve interoperability. Through
13 counter NBC wargaming scenarios, existing strategies and future concepts are tested. At
14 the strategic level, senior leaders develop judgment in applying the core competencies
15 across the range of military operations to counter NBC threats. At the operational level,
16 wargaming emphasizes judgment in the employment of aerospace forces to counter NBC
17 weapons. Realistic exercises (those with joint, interagency and coalition partners) and
18 wargaming are essential to find shortfalls and test corrective actions. Commanders should
19 continually assess the effects that training and wargaming have on their units' ability to
20 conduct their wartime mission.

21

22 **Summary**

23

1 The current and future threat of an NBC attack on US Air Force operations
2 demands the implementation and utilization of effective counter NBC education and
3 training. At each level of training, a working knowledge of counter NBC operations is
4 essential. Counter NBC education and training must include realistic survive-to-operate
5 exercises and scenarios, in-depth and basic instruction, and cross-functional involvement
6 to be effective in the event counter NBC operations are needed.

SUGGESTED READINGS

1
2
3 Compton, James A.F. *Military Chemical and Biological Agents, Chemical and*
4 *Toxicologic Properties*. Caldwell, NJ, The Telford Press, 1987.
5
6 Departments of the Army, the Navy, and the Air Force. AMedP-6(B), *NATO Handbook*
7 *on the Medical Aspects of NBC Defensive Operations*, Feb 99.
8
9 Douglas, Joseph, and Neil Livingstone. *America the Vulnerable: The Threat of*
10 *Chemical / Biological Warfare: The New Shape of Terrorism and Conflict*.
11 Lexington Book, 1987.
12
13 “Environmental Air Sampling to Detect Biologic Warfare Agents.” *Military Medicine*
14 (Aug 99), 541-542.

15 Franz, David R., DVM, PhD. *Defense Against Toxin Weapons*. U.S. Army Medical
16 Research Institute of Infectious Diseases, Fort Detrick, Maryland, 1997.
17
18 Fuller, John G. *The Day We Bombed Utah: America’s Most Lethal Secret*. NY, Nal
19 Books, 1984.
20
21 Gleisser. *Biological and Toxin Weapons Today*. Oxford, University Press, 1986.
22
23 Gordon, Michael R. and Trainor, Bernard E. (Gen). *The General’s War: The Inside Story*
24 *of the Conflict in the Gulf*. Boston, MA: Little, Brown, and Company, 1995.
25
26 Hockett, Michael C. *Air Interdiction of Scud Missiles: A Need for Alarm*. Maxwell
27 AFB, AL: Air War College, April 1995.
28
29 <http://www.acq.osd.mil/cp>
30
31 <http://www.defenselink.mil/>

32 JP 3-60, *Doctrine for Joint Targeting*
33
34 Keaney, Thomas A. and Cohen, Eliot A. *Gulf War Survey Summary Report*.
35 Washington, D.C.: Government Printing Office, 1993.
36
37 Kipphut, Mark E. *Crossbow and Gulf War Counter-Scud Efforts: Lessons from History*.
38 Maxwell AFB, AL: Air War College, April 1996.
39
40 *Medical Aspects of Chemical and Biological Warfare*. Washington, DC: Office of
41 Surgeon General, Borden Institute, Walter Reed Army Medical Center, 1997.

42 *Medical Management of Biologic Casualties*. 3d ed. U.S. Army Medical Research
43 Institute of Infectious Diseases, Fort Detrick, Maryland, 1998.

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Navias, Martin. *Saddam's Scud War and Ballistic Missile Proliferation*. London: Centre for Defense Studies, 1991.

Office of the Secretary of Defense. *Proliferation: Threat and Response*. Washington, Nov 97.

Roberts, Brad, ed. *Biologic Weapons: Weapons of the Future?* Washington, DC, The Center for Strategic and International Studies, 1993.

Sloan, Steven. *Beating International Terrorism*. Air University Press, Maxwell AFB, AL, 1986.

Spector, Leonard S., and Mark McDonough, eds. *Tracking Nuclear Proliferation*. Carnegie Endowment for International Peace, 1995.

The Washington Institute. *Policy Papers Number Twenty-One: The Sword of the Arabs: Iraq's Strategic Weapons*. Washington DC, The Washington Institute for Near East Policy, 1990

United States Strategic Bombing Survey. *V-Weapons (Crossbow) Campaign*. Military Analysis Division, January 1947.

Wirtz, James J. *Counterforce and Theater Missile Defense: ASW Approach to TMD Counterforce*. Carlisle Barracks, PA: Army War College Strategic Studies Institute, 27 Mar 1995.

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GLOSSARY

Abbreviations and Acronyms

AAA	antiaircraft artillery
ACC	air component commander
AE	aeromedical evacuation
AFDD	Air Force Doctrine Document
AFMS	Air Force Medical Service
AI	air interdiction
ATP	Allied Tactical Publication
AOR	area of responsibility
ASETf	Aerospace Expeditionary Task Force
C2	command and control
CAP	combat air patrol
CAS	close air support
CBW	chemical and biological warfare
COG	center of gravity
COMAFFOR	Commander, Air Force Forces
CONUS	continental United States
CRAF	civil reserve air fleet
CSAR	Combat Search and Rescue
DCA	defensive counterair
DOC	Designed Operational Capability
DOD	Department of Defense
DODD	Department of Defense Directive
ELINT	electronic intelligence
IO	information operations
IPE	individual protective equipment
ISR	intelligence, surveillance, and reconnaissance
JA	Judge Advocate
JAOC	joint air operations center
JFACC	joint force air component commander
JFC	joint force commander
JP	joint publication
JTF	joint task force
JRAC	joint rear area coordinator
LOAC	Law of Armed Conflict

1	LNO	liaison officer
2		
3	MOOTW	Military Operations Other Than War
4	MOPP	mission-oriented protective posture
5		
6		
7	NBC	nuclear, biological, and chemical
8	NCA	National Command Authorities
9	NGO	non-governmental organization
10		
11	OCA	offensive counterair
12	OPCON	operational control
13		
14	PHS	public health service
15	PVNTMED	preventive medicine
16		
17	RDD	radiological dispersal device
18		
19	SEAD	suppression of enemy air defenses
20	SO	special operations
21		
22	TACON	tactical control
23		
24	UAV	unmanned aerial vehicle
25		

26

27 **Definitions**

28

29 ***administrative control.*** Direction or exercise of authority over subordinate or other
30 organizations in respect to administration and support, including organization of Service
31 forces, control of resources and equipment, personnel management, unit logistics,
32 individual and unit training, readiness, mobilization, demobilization, discipline, and other
33 matters not included in the operational missions of the subordinate or other organizations.

34 Also called **ADCON**. (JP 1-02).

35 ***airlift.*** Operations to transport and deliver forces and materiel through the air in support
36 of strategic, operational, or tactical objectives. (AFDD 1)

37

1 ***air refueling.*** The capability to refuel aircraft in flight, which extends presence,
2 increases range, and allows air forces to bypass areas of potential trouble. (AFDD 1)

3

4 ***battlespace.*** The commander's conceptual view of the area and factors which he must
5 understand to successfully apply combat power, protect the force, and complete the
6 mission. It encompasses all applicable aspects of air, sea, space, and land operations that
7 the commander must consider in planning and executing military operations. The
8 battlespace dimensions can change over time as the mission expands or contracts
9 according to operational objectives and force composition. Battlespace provides the
10 commander a mental forum for analyzing and selecting courses of action for employing
11 military forces in relationship to time, tempo, and depth. (AFDD 1)

12

13 ***biological agent.*** A microorganism that causes disease in personnel, plants, or animals or
14 causes the deterioration of materiel (JP 1-02).

15

16 ***chemical agent.*** A chemical substance which is intended for use in military operations to
17 kill, seriously injure, or incapacitate personnel through its physiological effects. The term
18 excludes riot control agents, herbicides, smoke, and flame (JP 1-02).

19

20 ***close air support.*** Air action by fixed- and rotary-wing aircraft against hostile targets
21 which are in close proximity to friendly forces and which require detailed integration of
22 each air mission with the fire and movement of those forces. Also called **CAS**. (JP 1-02)

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close support. That action of the supporting force against targets or objectives which are sufficiently near the supported force as to require detailed integration or coordination of the supporting action with the fire, movement, or other actions of the supported force. (JP 1-02)

coalition. An ad hoc arrangement between two or more nations for common action. (JP 1-02)

combatant command (command authority). Nontransferable command authority established by title 10 (“Armed Forces”), United States Code, section 164, exercised only by commanders of unified or specified combatant commands unless otherwise directed by the President or the Secretary of Defense. Combatant command (command authority) cannot be delegated and is the authority of a combatant commander to perform those functions of command over assigned forces involving organizing and employing commands and forces, assigning tasks, designating objectives, and giving authoritative direction over all aspects of military operations, joint training, and logistics necessary to accomplish the missions assigned to the command. Combatant command (command authority) should be exercised through the commanders of subordinate organizations. Normally this authority is exercised through subordinate joint force commanders and the Service and/or functional component commanders. Combatant command (command authority) provides full authority to organize and employ commands and forces as the combatant commander considers necessary to accomplish assigned missions.

1 Operational control is inherent in combatant command (command authority). Also called
2 **COCOM**. (JP 1-02)

3

4 **command and control**. The exercise of authority and direction by a properly designated
5 commander over assigned and attached forces in the accomplishment of the mission.

6 Command and control functions are performed through an arrangement of personnel,
7 equipment, communications, facilities, and procedures employed by a commander in
8 planning, directing, coordinating, and controlling forces and operations in the
9 accomplishment of the mission. Also called **C2**. (JP 1-02)

10

11 **compatibility**. Capability of two or more items or components of equipment or material
12 to exist or function in the same system or environment without mutual interference. (JP
13 1-02)

14

15 **counterair**. A US Air Force term for air operations conducted to attain and maintain a
16 desired degree of air superiority by the destruction or neutralization of enemy forces.

17 Both air offensive and air defensive actions are involved. The former range throughout
18 enemy territory and are generally conducted at the initiative of the friendly forces. The
19 latter are conducted near or over friendly territory and are generally reactive to the

20 initiative of the enemy air forces. (JP 1-02) *[A function conducted to attain and*
21 *maintain a desired degree of air superiority. Counterair integrates and exploits the*
22 *mutually beneficial effects of offensive and defensive operations by fixed- and rotary-*
23 *wing aircraft, surface-to-air and air-to-air missiles, antiaircraft guns, artillery, and*

1 *electronic warfare to destroy or neutralize enemy aircraft and missile forces both before*
2 *and after launch.]*

3 {Italicized definition in brackets applies only to the Air force and is offered for clarity.}

4

5 ***counterforce operations.*** Operations that are intended to destroy or degrade an
6 adversary's offensive NBC capability before it can be used against friendly forces. {This
7 definition is not the same as the JP 1-02 definition. Used in this context because it best
8 describes the desired effect}.

9

10 ***counterland.*** Operations conducted to attain and maintain a desired degree of superiority
11 over surface operations by the destruction, disrupting, delaying, diverting, or other
12 neutralization of enemy forces. The main objectives of counterland operations are to
13 dominate the surface environment and prevent the opponent from doing the same.
14 (AFDD 1)

15

16 ***countersea.*** Operations conducted to attain and maintain a desired degree of superiority
17 over maritime operations by the destruction, disrupting, delaying, diverting, or other
18 neutralization of enemy naval forces. The main objectives of countersea operations are to
19 dominate the maritime environment and prevent the opponent from doing the same.

20

21 ***direct support.*** A mission requiring a force to support another specific force and
22 authorizing it to answer directly the supported force's request for assistance. (JP 1-02)

23

1 ***force protection.*** Security program designed to protect Service members, civilian
2 employees, family members, facilities, and equipment, in all locations and situations,
3 accomplished through planned and integrated application of combating terrorism,
4 physical security, operations security, personal protective services, and supported by
5 intelligence, counterintelligence, and other security programs (JP 1-02).

6

7 ***functional component command.*** A command normally, but not necessarily, composed
8 of forces of two or more Military Departments which may be established across the range
9 of military operations to perform particular operational missions that may be of short
10 duration or may extend over a period of time. (JP 1-02)

11

12 ***host nation.*** A nation which receives the forces and/or supplies of allied nations and/or
13 NATO organizations to be located on, to operate in, or to transit through its territory (JP
14 1-02).

15

16 ***joint force .*** A general term applied to a force composed of significant elements,
17 assigned or attached, of two or more Military Departments, operating under a single joint
18 force commander. (JP 1-02)

19

20 ***joint force air component commander.*** The joint force air component commander
21 derives authority from the joint force commander who has the authority to exercise
22 operational control, assign missions, direct coordination among subordinate commanders,
23 redirect and organize forces to ensure unity of effort in the accomplishment of the overall

1 mission. The joint force commander will normally designate a joint force air component
2 commander. The joint force air component commander's responsibilities will be assigned
3 by the joint force commander (normally these would include, but not be limited to,
4 planning, coordination, allocation, and tasking based on the joint force commander's
5 apportionment decision). Using the joint force commander's guidance and authority, and
6 in coordination with other Service component commanders and other assigned or
7 supporting commanders, the joint force air component commander will recommend to the
8 joint force commander apportionment of air sorties to various missions or geographic
9 areas. Also called **JFACC**. (JP 1-02)

10

11 ***joint force commander***. A general term applied to a combatant commander, subunified
12 commander, or joint task force commander authorized to exercise combatant command
13 (command authority) or operational control over a joint force. Also called **JFC**. (JP 1-02)

14

1 ***joint rear area coordinator*** . The officer with responsibility for coordinating the overall
2 security of the joint rear area in accordance with joint force commander directives and
3 priorities in order to assist in providing a secure environment to facilitate sustainment,
4 host nation support, infrastructure development, and movements of the joint force. The
5 joint rear area coordinator also coordinates intelligence support and ensures that area
6 management is practiced with due consideration for security requirements. Also called
7 **JRAC**. (JP 1-02).

8

9 ***joint task force***. A joint force that is constituted and so designated by the Secretary of
10 Defense, a combatant commander, a subunified commander, or an existing joint task
11 force commander. Also called **JTF**. (JP 1-02)

12

13 ***joint theater missile defense***. The integration of joint force capabilities to destroy enemy
14 theater missiles in flight or prior to launch or to otherwise disrupt the enemy's theater
15 missile operations through an appropriate mix of mutually supportive passive missile
16 defense; active missile defense; attack operations; and supporting command, control,
17 communications, computers, and intelligence measures. Enemy theater missiles are those
18 that are aimed at targets outside the continental United States. Also called **JTMD** (JP 1-
19 02).

20

21 ***nuclear, biological, and chemical capable nation***. A nation that has the capability to
22 produce and employ one or more types of nuclear, biological, and chemical weapons

1 across the full range of military operations and at any level of war in order to achieve
2 political and military objectives (JP 1-02).

3 ***nuclear weapon.*** A complete assembly (i.e., implosion type, gun type, or thermonuclear
4 type), in its intended ultimate configuration which, upon completion of the prescribed
5 arming, fusing, and firing sequence, is capable of producing the intended nuclear reaction
6 and release of energy (JP 1-02).

7 ***operational control.*** Transferable command authority that may be exercised by
8 commanders at any echelon at or below the level of combatant command. Operational
9 control is inherent in combatant command (command authority). Operational control may
10 be delegated and is the authority to perform those functions of command over
11 subordinate forces involving organizing and employing commands and forces, assigning
12 tasks, designating objectives, and giving authoritative direction necessary to accomplish
13 the mission. Operational control includes authoritative direction over all aspects of
14 military operations and joint training necessary to accomplish missions assigned to the
15 command. Operational control should be exercised through the commanders of
16 subordinate organizations. Normally this authority is exercised through subordinate joint
17 force commanders and Service and/or functional component commanders. Operational
18 control normally provides full authority to organize commands and forces and to employ
19 those forces as the commander in operational control considers necessary to accomplish
20 assigned missions. Operational control does not, in and of itself, include authoritative
21 direction for logistics or matters of administration, discipline, internal organization, or
22 unit training (JP 1-02).

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passive defense. Passive defense measures improve the capability of personnel to survive and sustain operations in an NBC environment. It consists of contamination avoidance, protection, and contamination control.

proliferation prevention. Denying attempts by would-be proliferants to acquire or expand their NBC capabilities by providing: inspection, verification, and enforcement support for nonproliferation treaties and NBC control protocols; supporting export control activities; assisting in the identification of potential proliferants before they can acquire or expand their NBC capabilities; and, if so directed by the National Command Authorities (NCA), planning and conducting attack missions during periods outside of hostilities.

Radiological dispersal device. Any device, other than a nuclear explosive device, that disseminates radiation to cause damage or radiation injury.

tactical control. Command authority over assigned or attached forces or commands, or military capability or forces made available for tasking, that is limited to the detailed and, usually, local direction and control of movements or maneuvers necessary to accomplish missions or tasks assigned. Tactical control is inherent in operational control. Tactical control may be delegated to, and exercised at any level at or below the level of combatant command.

1 ***theater missile.*** A missile, which may be a ballistic missile, a cruise missile, or an air-to-
2 surface missile (not including short-range, non-nuclear, direct fire missiles, bombs, or
3 rockets such as Maverick or wire-guided missiles), whose target is within a given theater
4 of operation. (JP 1-02).

5