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TURKEY'S RESPONSE TO THREATS OF WEAPONS OF MASS DESTRUCTION

by

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Unlike most of its NATO allies, Turkey did not emerge from the Cold War with enhanced security. The acquisition of weapons of mass destruction (WMD) and ballistic missiles by its neighbors in the Middle East—Iran, Iraq and Syria—creates a serious security concern for Turkey. This thesis analyzes the numerous threats posed to Turkey by its neighbors' nuclear, chemical and biological weapons programs and their ballistic missiles. It evaluates Turkey's defense options to counter these threats and examines the credibility of NATO's security guarantees, including the nuclear guarantees the United States provides under NATO auspices. The thesis concludes that Turkey must acquire the capabilities to deny adversaries the benefits of these weapons. These capabilities—including passive and active defenses as well as improved counterforce means—will enable Ankara to strengthen deterrence and provide an effective defense should deterrence fail. Improving its preparedness for WMD contingencies should be an urgent, new priority for Turkey. The Turkish Armed Forces should have the necessary capabilities to fight, survive and prevail in NBC environments. In addition, NATO's security guarantees, which hinge ultimately on the U.S. nuclear presence and U.S. extended deterrence commitments in Europe, and Turkey's own national defense and deterrence posture, must remain convincing to Turkey as well as to the WMD-armed states that threaten Turkey.

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TURKEY'S RESPONSE TO THREATS OF WEAPONS OF MASS DESTRUCTION

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Submitted in partial fulfillment of the
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ABSTRACT

Unlike most of its NATO allies, Turkey did not emerge from the Cold War with enhanced security. The acquisition of weapons of mass destruction (WMD) and ballistic missiles by its neighbors in the Middle East—Iran, Iraq and Syria—creates a serious security concern for Turkey. This thesis analyzes the numerous threats posed to Turkey by its neighbors' nuclear, chemical and biological weapons programs and their ballistic missiles. It evaluates Turkey's defense options to counter these threats and examines the credibility of NATO's security guarantees, including the nuclear guarantees the United States provides under NATO auspices. The thesis concludes that Turkey must acquire the capabilities to deny adversaries the benefits of these weapons. These capabilities—including passive and active defenses as well as improved counterforce means—will enable Ankara to strengthen deterrence and provide an effective defense should deterrence fail. Improving its preparedness for WMD contingencies should be an urgent, new priority for Turkey. The Turkish Armed Forces should have the necessary capabilities to fight, survive and prevail in NBC environments. In addition, NATO's security guarantees, which hinge ultimately on the U.S. nuclear presence and U.S. extended deterrence commitments in Europe, and Turkey's own national defense and deterrence posture, must remain convincing to Turkey as well as to the WMD-armed states that threaten Turkey.

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LIST OF ACRONYMS AND ABBREVIATIONS

ACE	Allied Command Europe
AMF	Air Mobile Force
ATACMS	Army Tactical Missile System
ATBM	Anti-Tactical Ballistic Missile
AWACS	Airborne Early Warning and Control Systems
BW	Biological Weapons
BTWC	Biological and Toxin Weapons Convention
CBW	Chemical and Biological Weapons
CWC	Chemical Weapons Convention
CW	Chemical Weapons
EMD	Engineering Manufacturing and Development
ESDP	European Security and Defense Policy
EU	European Union
GAP	Southeastern Anatolian Project
HARM	High-Speed Anti-Radiation Missile
IAEA	International Atomic Energy Agency
IRGC	Iranian Revolutionary Guard Corps
LOROP	Long-Range Oblique Photography
MEADS	Medium Extended Air Defense System
NATO	North Atlantic Treaty Organization
NBC	Nuclear, Biological and Chemical
NMD	National Missile Defense
NPT	Nuclear Non-proliferation Treaty
OPC	Operation Provide Comfort
PAC	Patriot Advanced Capability
TAF	Turkish Armed Forces
PKK	Kurdistan Workers Party
TBM	Tactical Ballistic Missiles
TBMD	Theater Ballistic Missile Defense

TMD	Theater Missile Defense
TUAF	Turkish Air Force
SAM	Surface-to-Air Missile
VEE	Venezuelan Equine Encephalitis
WEU	Western European Union
WMD	Weapons of Mass Destruction
UAV	Unmanned Air Vehicle

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EXECUTIVE SUMMARY

Unlike most of its NATO Allies, Turkey did not emerge from the Cold War with a sense of enhanced security. The acquisition of weapons of mass destruction (WMD) and ballistic missiles by Turkey's Middle East neighbors has become the leading security concern for Turkish leaders in the 21st Century. Turkey is completely exposed to WMD threats and to air and missile attacks on its southeastern borders. More than two thirds of Turkey's territory, including the capital city Ankara, and Turkey's other population centers, dams, power stations, air bases, communication facilities and military headquarters are within the range of Iranian, Iraqi and Syrian ballistic missiles. And because these missiles are capable of carrying chemical or biological warheads, Turkey feels very insecure.

Fueled by a combination of external and internal motives or both, Iran, Iraq and Syria either already possess or are acquiring WMD capabilities, along with the means of delivering them. Iran already has a substantial chemical warfare capability and is pursuing nuclear and biological weapons. It also has an advanced long-range ballistic missile development program. Iraq's WMD development programs are on hold while UN sanctions prevail, but it is widely believed that Iraq retains chemical and biological weapons production capability and that Baghdad is in a position to produce chemical and biological weapons quickly once international sanctions are lifted. Syria has chemical weapons and a biotechnical infrastructure to support a limited biological warfare program. Damascus increasingly relies on a strategic deterrent based on ballistic missiles and chemical warfare capabilities. Considering Turkey's ongoing disputes with each of these three neighbors—fueled by their support for terrorism and Islamic fundamentalism, and the long-standing unresolved water disputes with Syria and Iraq—the WMD proliferation problem on Turkey's southeastern borders is acute.

This thesis analyzes the numerous threats that Turkey faces from its southeastern neighbors' nuclear, chemical and biological weapons programs and the increased ranges of their ballistic missiles. The thesis also evaluates Turkey's various defense options and the adequacy of three particular options (counterforce, missile defense and passive defense) to counter potential WMD and missile threats from Iran, Iraq and Syria.

This thesis analyses the credibility of NATO's security guarantees to Turkey, including the nuclear guarantees the United States provides under NATO auspices. It considers the possibility that NATO's security commitments to Turkey—including U. S. nuclear guarantees—might be insufficient to deter WMD use against Turkey in a conflict with a Middle Eastern neighbor. Several obstacles to a comprehensive NATO response—including NATO's internal cohesion problems and the Alliance's challenges in protecting its population, forces and territory (as defined in Article 6) against WMD and ballistic missile attacks—suggest that NATO's Article 5 mutual-defense pledge may not be honored in all circumstances.

Based on an evaluation of Turkey's possible defense options, within the NATO force structure and defense planning and also outside NATO, this thesis concludes that Turkey should acquire the military capabilities required to deny an enemy the benefits of using WMD. These capabilities—ranging from active and passive defences to improved counterforce capabilities—would strengthen deterrence and would provide the best hedge against deterrence failure. Being prepared to counter the use of NBC weapons and missiles, and with an ability to mitigate and overcome their effects, is an essential element in deterring their use. Therefore, WMD defense should be an urgent new priority for the Turkish military in planning for future regional contingencies, force projection scenarios, expeditionary operations and peacekeeping operations. The Turkish military forces should have the necessary capabilities to prevail in military engagements that might involve NBC weapons.

In the event that deterrence fails, Turkey should have military options developed in the framework of deterrence through denial and punishment capabilities. Turkey's military posture should demonstrate to any potential adversary that Turkey will not be coerced or defeated by the threat or use of WMD and that Turkey has the will and ability to counter these threats. In addition, NATO's security guarantees, which hinge ultimately on the U.S. nuclear presence and U.S. extended deterrence commitments in Europe, and Turkey's own national defense and deterrence posture must remain credible to Turkey as well as to the WMD-armed states that threaten Turkey.

I. INTRODUCTION

Unlike most of its NATO Allies, Turkey did not emerge from the Cold War with a sense of enhanced security. Since the end of the Cold War, multiple security threats and risks have emerged around Turkey, making the country the new frontline state within NATO. Ethnic and religious conflicts in the Balkans and also in the Trans-Caucasian territories of the former Soviet Union, coupled with the volatile and unstable situation in the Middle East, have left Turkey among the world's most insecure countries. Simultaneously, residual risks from Russia's more assertive behavior toward its neighbors and its gradual return to a spheres-of-influence policy in the "near abroad" have multiplied Ankara's concerns. Moreover, Turkey's two-decade struggle against the separatist Kurdistan Workers Party (known by its Kurdish initials, PKK) and the increasing danger of Islamic fundamentalism have threatened Turkey's unity and sovereignty internally. Thus, it would be reasonable to conclude that no other member of NATO faces a similar range of external security challenges or such significant internal problems.

A. BACKGROUND

1. WMD Threats

Although the presence of multiple military threats is not new for Turkey, an entirely new category of risks now threatens Turkey's vital security interests. The acquisition of weapons of mass destruction (WMD) and ballistic missile systems by Turkey's Middle East neighbors constitutes the top security concern for Turkish policymakers and strategists.

Fueled by a combination of external and internal motives or both, Iran, Iraq and Syria either already possess or are acquiring WMD capabilities, along with the means for delivering them. Iran already has a substantial chemical warfare capability and is pursuing nuclear and biological weapons. It also has an advanced long-range ballistic missile development program. Iraq's WMD development programs are on hold while UN sanctions prevail, but it is widely believed that Iraq retains chemical and biological weapons production capability and that Baghdad is in a position to produce chemical and

biological weapons quickly once international sanctions are lifted. Syria has chemical weapons and a biotechnical infrastructure to support a limited biological warfare program. Damascus increasingly relies on a strategic deterrent based on ballistic missiles and chemical warfare capabilities.[1]

Nowhere else in NATO are the disturbing effects of WMD proliferation felt more keenly than in Turkey. Turkey is completely exposed to WMD threats and to air and missile attacks on its southeastern borders. More than two thirds of Turkey's territory, including the capital city Ankara, and Turkey's other population centers, dams, power stations, air bases, communication facilities and military headquarters are within the range of Iranian, Iraqi and Syrian ballistic missiles. And because these missiles are capable of carrying chemical or biological warheads, Turkey feels very insecure.

Because of these emerging threats, Turkey has been unable to reduce the heavy defense burden it carried as a southern flank NATO country playing a pivotal role in containing the Soviet Union during the Cold War. Turkey feels obliged to defend its security interests and deter aggression by relying mostly on its own military capabilities, but considering the seriousness of these new WMD threats, Turkey requires the support of its allies as well. Turkey's unique geopolitical location does not provide it with the luxury of downgrading its deterrent capabilities and reducing its defense spending. Therefore, any further acquisition of WMD capabilities by potentially hostile actors in the region, whether states or non-state actors, will exacerbate the sense of vulnerability Turkey feels, and commensurately, increase Turkey's sensitivity to the credibility of NATO's security assurances.

2. Why Turkey Feels Threatened

Diverse military threats to Turkish security have been a fact of life for decades, but the sense of vulnerability to WMD threats has intensified since the 1990-1991 Gulf War. Several factors have exacerbated this sense of vulnerability. The ongoing debate in Europe concerning NATO's role and relevance in the new international security environment, the exclusion of Turkey from the European Union's emerging security

[1] U.S. Department of Defense, *Proliferation: Threat and Response* (Washington D.C.: U.S. Government Printing Office, January 2001), p. 40. Available online: www.defenselink.mil.

structures, increasing doubts about the credibility of NATO's security commitments to Turkey in the case of a WMD attack on its territory, Turkey's bitter experience during the 1990-1991 Gulf War (including fear of a possible Iraqi Scud missile attack on Turkey in retaliation for Turkey's major support to operations against Iraq) are the main factors that have affected Turkey's security perceptions. Moreover, the recognition that it was ill-prepared to protect its territory, population centers and deployed forces along the Iraqi border from a possible Iraqi NBC-tipped Scud attack further deepened Turkey's sense of vulnerability. Since 1991 Turkish strategic planners have become increasingly concerned about the threats posed to Turkish territory and population centers by modified Scud and more advanced missile systems deployed or under development by Iran, Iraq and Syria.[2]

Considering Turkey's ongoing disputes with each of these three neighbors—fueled by their support for terrorism and Islamic fundamentalism, and the long-standing unresolved water disputes with Syria and Iraq—the WMD proliferation problem on Turkey's southeastern borders is acute. Turkey has supported U.S.-led coalition operations against Iraq in various ways, any of which might have elicited an Iraqi response. In 1998 Turkey came to the brink of war with Syria over Syria's harboring of PKK leader Abdullah Ocalan and its continuing support for PKK terrorists. Syria might have employed NBC-tipped Scud B or Scud C missiles against Turkish targets if this crisis had escalated any further. Damascus also might conduct such attacks during a war if a significant amount of Syrian territory were lost or if the survival of the Assad regime were threatened.[3]

Relations are no less tense with Iran. On several occasions in 1994 and 1999 Turkey came to the brink of military confrontation with Iran. Iranian attempts to undermine Turkey's secular order and Tehran's support for Islamic terrorist organizations as well as the PKK became the main sources of tension between the two countries and still constitute potential flashpoints. The successful tests of Shabab-3 missiles that could reach large parts of Turkey and the Iranian efforts to develop nuclear weapons have

2 Ian O. Lesser and Ashley Tellis, *Strategic Exposure: Proliferation around the Mediterranean* (Santa Monica, Calif.: RAND, 1996) , p. 24.
3 Ian O. Lesser, *NATO Looks South: New Challenges and New Strategies in the Mediterranean*, (Santa Monica , Calif.: RAND, 2000), p. 38.

reminded Turkey of its insufficient anti-missile capabilities in a region where the acquisition of medium-range missiles is a growing trend.

Both states and non-state actors in the region see WMD and related delivery systems as valuable tools to facilitate the pursuit of aggressive policies. As the possible scenarios mentioned above suggest, a WMD-armed Iran, Iraq or Syria could easily be in a position to intimidate, threaten or blackmail Turkey over long-standing disputes and conflicts. NBC weapons are highly prized by these regimes as tools to deter outside intervention in the region, making it relatively safe for them to pursue their own aggressive designs. If their threats failed, these weapons still could be used as a means to inflict massive casualties on Allied forces. Faced with such threats, NATO forces might be forced to withdraw before honoring their pledge to defend Turkey in accordance with Article 5 of the North Atlantic Treaty.

B. ARGUMENT

This thesis aims to evaluate the adequacy of Turkey's defense options to counter potential WMD threats from Iran, Iraq and Syria. The thesis identifies current Turkish capabilities and policy gaps with regard to the WMD threats and offers recommendations concerning Turkish policy and required capabilities over WMD risks.

Based on an evaluation of Turkey's possible defense options, within the NATO force structure and defense planning and also outside NATO, this thesis argues that Turkey should acquire the military capabilities required to deny an enemy the benefits of using WMD. These capabilities—ranging from active and passive defences to improved counterforce capabilities—would strengthen deterrence and would provide the best hedge against deterrence failure. In addition, NATO's security guarantees, which hinge ultimately on the U.S. nuclear presence and U.S. extended deterrence commitments in Europe and Turkey, must remain credible to Turkey and to the WMD-armed states that threaten Turkey.

This thesis identifies the required capabilities and appropriate policies to respond to increasing WMD threats on Turkey's immediate periphery. Indeed, being prepared to counter the use of NBC weapons and missiles, and being able to mitigate and overcome their effects, is an essential element in deterring their use. This can be only accomplished

by maintaining a comprehensive military capability spanning active and passive defenses to counterforce capabilities. Being prepared for chemical and biological and nuclear contingencies should be an urgent, new priority for the Turkish military in planning for future regional contingencies, force projection scenarios, expeditionary operations and also for peacekeeping operations. At a minimum, Turkish military should have the necessary capabilities to prevail in military engagements that might involve NBC weapons.

C. ORGANIZATION

The issues mentioned above are analyzed in six subsequent chapters. Chapters II, III and IV examine the WMD threats posed to Turkey by Iraq, Iran and Syria respectively. This section of the thesis analyzes the publicly available evidence about programs to develop or improve WMD capabilities in Iraq, Iran and Syria. To form an assessment of the likelihood of WMD use against Turkey, this section of the thesis attempts to discern intentions on the basis of published policies as well as behavior in previous conflicts and crises. This analysis provides a basis for conclusions about how these intentions might evolve into WMD use against Turkey in a confrontation.

In Chapter V, NATO's deterrent posture against WMD threats and the credibility of NATO's security guarantees are analyzed. By reviewing NATO's defense capabilities to counter WMD threats and the explicit commitments made by the United States under NATO auspices, and U.S. capabilities to honor these commitments, this section of the thesis identifies the essential elements of NATO's deterrent posture and security guarantees to Turkey. The analysis then assesses the credibility and reliability of these guarantees in Turkish eyes as well as in the eyes of the potential adversaries.

Chapter VI analyzes Turkey's national defense capabilities as well as its overall deterrent posture against WMD threats. By reviewing Turkey's current and projected active and passive defenses and its medical and intelligence capabilities against WMD attacks on its territory and population centers, this analysis specifies the main elements of Turkey's deterrent posture vis-à-vis WMD threats. It also identifies Turkish capability gaps with regard to NBC defense and the required WMD defense capabilities needed for

an effective counter-proliferation strategy to deter adversaries from attacking Turkey, with or without WMD.

The concluding chapter evaluates Turkey's possible defense options to counter increasing WMD threats—including its unilateral defense posture as well as its NATO defense strategy. By considering Turkey's current and proposed capabilities and by outlining the advantages and shortcomings of these defense options, the thesis aims to identify Turkey's optimal defense options in response to WMD risks.

II. IRAQ'S WMD THREAT TO TURKEY

A. INTRODUCTION

Numerous contentious issues dominate the relations between Turkey and Iraq. Turkish concerns about Iraq's expansionism and search for hegemony in the region, Iraqi support for PKK terrorism, Turkey's many anti-PKK incursions into northern Iraq, the Iraqi quest for weapons of mass destruction, the conflict over sharing the waters of the Euphrates and the Tigris rivers, and Turkish control of the Iraqi oil pipeline to the Mediterranean all constitute sources of tension and confrontation between Turkey and Iraq. The latter two issues not only represent critical points of friction but also could become instruments of hostile action in the event of a deterioration of bilateral relations on other grounds.[4]

Yet, there may be more problems to come. The future of northern Iraq is unsettled. The growing political and security vacuum in northern Iraq and its effect on the stability of Turkey's southeast continue to remain major areas of conflict. Moreover, Iraq's quest for power in the region brings it inevitably into conflict with Turkey, especially now that Iraq views its power in terms of possession of weapons of mass destruction. The presence of such weapons in Iraq is fundamentally intolerable to Turkey's leaders, in view of the implications for the nation's interests. If Iraq was able to acquire such weapons, without any further challenge from the external powers upholding the nonproliferation regime and the UN Security Council resolutions regarding Iraq, and if Ankara deemed NATO guarantees (including their nuclear dimension) insufficient, Turkey could be driven to seek comparable weapons, if only on defensive basis. Facing a strategic dilemma, Ankara could feel compelled to respond to the increasing WMD and missile threats to its security by developing deterrent capabilities of its own.

Iraq's huge non-conventional warfare capability and its repeated threatened use and actual employment of some of these weapons raises enormous challenges for Turkey, as well as for other countries in the region. This chapter focuses on Iraqi WMD

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[4] Graham E. Fuller and Ian O. Lesser, *Turkey's New Geopolitics: From Balkans to Western China* (Boulder: Westview Press, 1993), p. 60.

capabilities and potential threat scenarios. It analyzes four questions about the perceived Iraqi WMD threat to Turkish security:

- What are Iraq's nuclear, chemical, and biological weapons capabilities?
- Why was this arsenal acquired?
- What is the status of Turkey's relationship with Iraq and what are the flashpoints?
- To what extent and under what circumstances could these potential sources of conflict trigger WMD use against Turkey?

Many reasons could spark a Turkish-Iraqi conflict. This chapter argues that the current tension in relations and the potential sources of conflict between Baghdad and Ankara could trigger CBW use against Turkey. In this sense, understanding the level of WMD pressure on Turkey, and the relative importance of the need in Iraq's strategic calculus to deter Turkey, helps to specify the circumstances under which Iraq could use chemical, biological, or nuclear weapons against Turkey.

B. CAPABILITIES

Iraq's immense weapons of mass destruction acquisition efforts were made clear when its Scud and Al-Hussein missiles were fired against civilian and military targets in the 1980-1988 Iran-Iraq War and in the 1990-1991 Gulf War. The level of the Iraqi arsenal prior to the Gulf War is summarized by Timothy McCarthy and Jonathan Tucker:

> By the time of the 1991 Persian Gulf War, Iraq had amassed the most extensive arsenal of chemical and biological weapons in the developing world, together with a ballistic missile force capable of delivering conventional and nonconventional payloads to theaterwide targets. Baghdad also maintained an ambitious nuclear research and development program, and by 1990 the Iraqis were perhaps one year away from deploying a nuclear device. Saddam Hussein thus sought a robust capability in all categories of unconventional weapons and was prepared to invest enormous financial and human resources to achieve this goal.[5]

Iraqi attempts to seek asymmetric means to outset their adversaries' superior conventional capabilities is analyzed below.

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[5] Timothy V. McCarthy and Jonathan B. Tucker, " Saddam's Toxic Arsenal: Chemical and Biological Weapons in the Gulf Wars," in Peter R. Lavoy, Scott D. Sagan and James J. Wirtz, eds., *Planning the Unthinkable: How New Powers Will Use Nuclear, Biological, and Chemical Weapons* (Ithaca: Cornell University Press, 2000), p. 47.

1. Nuclear Weapons Program

Although a party to the Non-Proliferation Treaty (NPT), Iraq had a clandestine nuclear weapons development program prior to Operation Desert Storm. Iraq sought to build an implosion-type nuclear explosive device and test its nuclear components. For this purpose, following the invasion of Kuwait in August 1990, Iraq embarked on a "crash program" to develop a nuclear device by extracting weapons-grade material from safeguarded research reactor fuel. At the same time, Iraq was developing ballistic missiles project to deliver its nuclear arms. Iraqi nuclear weapons aspirations were kept under intensive scrutiny by IAEA (International Atomic Energy Agency) / UNSCOM (United Nations Special Commission on Iraq) inspections and monitoring between 1991 and 1998.[6] All detected weapons-usable fissile material that Iraq had obtained for running research reactors was placed into IAEA custody and eventually removed from Iraq.[7] According to the 2001 U.S. Department of Defense report, *Proliferation: Threat and Response*, the danger of Iraqi nuclear weapons still exists:

> Although Iraq claims that it destroyed all of the specific equipment and facilities useful for developing nuclear weapons, it still retains sufficient skilled and experienced scientists and engineers as well as weapons design information that could allow it to restart a weapons program. Iraq would need five or more years and key foreign assistance to rebuild the infrastructure to enrich enough material for a nuclear weapon. This period would be substantially shortened should Baghdad successfully acquire fissile material from a foreign source.[8]

Therefore, it is highly likely that Iraq—which prior to the 1991 Gulf War was close to a nuclear capability—may have reconstituted these efforts since the departure of UN inspectors from Iraq in late 1998.

2. Chemical Weapons Program

Iraq also has a record of using chemical weapons against not only enemy troops, but also against its own unarmed Kurdish population. Iraq's chemical weapons production had continued until December 1990, with sufficient quantities of precursor

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[6] U.S. Department of Defense, *Proliferation: Threat and Response* (Washington D.C.: U.S. Government Printing Office, January 2001), p. 40.

[7] Ibid

[8] Ibid.

materials for almost 500 tons of the nerve agent "VX" and several chemical weapon agents, including mustard gas and the nerve agents tabun (GA), sarin (GB), cyclosarin (GF), some of which may remain hidden.[9] Most of these agents were placed in a wide range of delivery systems—155 mm "artillery and mortar shells, 250-and 500-kilogram aerial bombs, 122 mm surface-to-surface rockets, and 90 mm air-to-surface rockets (mounted on helicopters)"—and were ready for combat use.[10] UNSCOM "destroyed a total of 28,049 Iraqi chemical munitions and more than 481,000 liters of chemical warfare agents and precursors" between 1991 to 1994.[11]

While developing and deploying chemical warheads for its long-range Al-Hussein missiles, Iraq also pursued the use of chemical weapons to achieve strategic objectives on the battlefield. At least fifty chemical warheads were produced and ready to be deployed for the long-range Al-Hussein missiles.[12] UNSCOM's discovery of the evidence of "VX" in Iraqi missile warheads in 1998 supports these judgments.[13]

Iraq's doctrine for using chemical weapons evolved during the 1980-1988 Iran-Iraq War. During the different stages of the war, including the "War of The Cities," chemical weapons were used as a tactical weapon as a part of Iraqi offensive operations. Various delivery means, including aerial bombs, long-range artillery shells, rocket launchers, tactical rockets and aircrafts and helicopters carrying spray tanks (for aerosol dissemination), were used by Iraqi forces to deliver CW against Iranian forces.[14]

As Table 1 shows, Iraq is the most recent user of weapons of mass destruction in the region. According to Intelligence sources, the following uses of chemical weapons were reported during the 1980-88 Iran-Iraq War:

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9 McCarthy and Tucker, " Saddam's Toxic Arsenal," p. 52.
10 Ibid, p. 52.
11 Ibid, p. 52.
12 Ibid, p. 52
13 *Proliferation: Threat and Response*, p. 40.
14 Ibid, p. 42.

Date	***Area***	***Type of Gas***	***Approximate Casualties***	***Target***
August 1983	Haij Umran	Mustard	Less than 100	Iranians/Kurds
October-November 1983	Panjwin	Mustard	3,0000	Iranians/Kurds
February-March 1984	Majnoon Island	Mustard	2,500	Iranians
March 1984	Al-Basrah	Tabun	50-100	Iranians
March 1985	Hawizah Marsh	Mustard/Tabun	3,000	Iraninas
February 1986	Al Faw	Mustard/Tabun	8,000-10,000	Iranians
December 1986	Umm ar Rasas	Mustard	1,000s	Iranians
April 1987	Al Basrah	Mustard/Tabun	5,000	Iranians
October 1987	Sumar/Mehran	Mustard/Nerve Agents	3,000	Iranians
March 1988	Halabjah	Mustard/Nerve Agents	Hundreds	Iranians/Kurds
Note: Iranians also used poison gas at Halabjah and may have caused some of the casualties.				

Table 1: Iraqi Use of Chemical Weapons during the 1980-88 Iran–Iraq War.[15]

Since the Gulf War, some officials have been concerned that Iraq might have rebuilt key portions of its industrial and chemical production infrastructure. By not becoming a state party to CWC (Chemical Weapons Convention), Iraq has reinforced these concerns. It should be recalled that Iraq retains the necessary expertise and sufficient skills, and Iraq's facilities could be converted quickly to the production of CW. Therefore, depending on the type of agent, procurement of dual-technology and

[15] Anthony H. Cordesman, *Weapons of Mass Destruction in the Middle East*, Center for Strategic and International Studies (Washington D.C.: CSIS, July 2001), p. 47.
Available Online: http://www.csis.org/burke/mb/me_wmd_regionaltrends.pdf.

availability of foreign assistance, the Iraqi CW arsenal may reach to pre-Desert Storm levels in a very short time.

3. Biological Weapons Program

Iraq also produced and weaponized significant quantities of biological warfare agents prior to Operation Desert Storm. Having first decided to acquire BW by developing botulinum toxin for covert use against the regime's enemies in late 1972, Iraq developed a capability to produce a wide array of biological agents, "including pathogenic bacteria (anthrax, plague, and *Clostridium perfringens.*..), potent toxins (butolinum toxin, afla-toxin, ricin, and trichothecene mycotoxins), an anti-crop agent, and three incapacitating viruses (hemorrhagic conjunctivitis, rota-virus, and camel pox)" by 1986.[16] After the invasion of Kuwait in August 1990, "Baghdad initiated a 'crash' program of large-scale production and weaponization." It produced "at least 19,000 liters of concentrated botulinum toxin, 8,500 liters of a concentrated slurry of anthrax spores … and 2,200 liters of concentrated aflatoxin," despite being a party to the BTWC (Biological and Toxic Weapons Convention).[17] It was also "suspected to be capable of producing dry anthrax spores, which have a much longer shelf life and can be disseminated as an aerosol cloud over greater distances."[18]

During the Gulf War, Iraqi forces claim " to have filled 157 aerial bombs and 25 Al-Hussein missile warheads with biological agents" and to have dispersed them in forward storage positions and airfields for rapid employment.[19] These weapons were intended for use against Israel and coalition forces in Saudi Arabia and elsewhere.

UN experts believe that "Baghdad has the ability to reconstitute its biological warfare capabilities within a few weeks or months."[20] With the abrupt end of UNSCOM inspections and monitoring in 1998, Baghdad may have resumed producing and stockpiling biological warfare agents.[21]

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16 McCarthy and Tucker, " Saddam's Toxic Arsenal," p. 52.
17 Ibid, p. 53.
18 Ibid.
19 Ibid, p. 54.
20 *Proliferation: Threat and Response*, p. 40.
21 Ibid.

4. Ballistic Missile Program

Prior to the Gulf War, Iraq had many short-range ballistic-missiles, including a stockpile of Soviet-supplied, single-stage, liquid-fueled Scud-B's, with a 300 km range and 1,000 kg payload, and three indigenously produced variants of the Scud-B, the Al-Hussein Short, and the Al-Hijarah, all three with an approximate range of 600-650 km.[22] Since then, Iraq likely possesses a limited number of launchers and Scud-variant SRBMs capable of striking neighbors, including Turkey, as well as various parts and assembly infrastructure necessary for the reestablishing a long-range missile.[23] Despite its poor accuracy, Iraq fired nearly 90 Al-Hussein missiles at Israel and the Arabian Peninsula during operation Desert Storm.[24] However, Baghdad might have improved the accuracy of its missiles since then.

During 1999, within the 150-kilometer range restriction imposed by the UN, Iraq embarked on the indigenous production of two short-range ballistic missile systems: The liquid-propellant Al-Samoud, and the solid propellant Ababil-100 SRBMs are modified Scuds designed by Iraq.[25] Iraq maintains the proficiency for longer-range missiles. Once the 150-kilometers range restriction is lifted, these missiles could easily be converted to longer-range missile systems missiles, thereby giving the Iraqis the ability to threaten Turkey, Israel and Iran as well as much of the Arabian Peninsula.[26] Iraq may have retained a very small " stockpile of land-launched short-range anti-ship cruise missiles and air launched short-range tactical missiles" that may be potential means of delivery for NBC weapons.[27]

U.S. intelligence officials believe that Iraq might be hiding dozens of Scud-class missiles with a range of 650 kilometers.[28] The regime of president Saddam Hussein

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[22] Rodney W. Jones and Mark G. McDonough with Toby F. Dalton and Gregory D. Koblentz, *Tracking Nuclear Proliferation:A Guide in Maps and Charts,1998* (Washington D.C.: Carnegie Endowment for International Peace,1998), p. 192.

[23] *Proliferation: Threat and Response*, p. 42.

[24] Ibid, p. 41.

[25] Ibid, p. 42

[26] Ibid.

[27] Ibid.

[28] "Iraq Maintains Medium-Range Missile Arsenal, " *Middle East Newsline*, 29 August 2001. Available online: www.menewsline.com

might have rebuilt most of its production facilities and might be continuing to develop new missiles. The recent statement of CIA deputy director, John McLaughlin, best reflects the increasing worries over Iraqi missile capabilities: "We also believe that Saddam is hiding a small force of Al-Hussein SRBMs [short-range ballistic missiles] with a range of 650 kilometers, capable of targeting Israel, Iran, Saudi Arabia, and Turkey." [29]

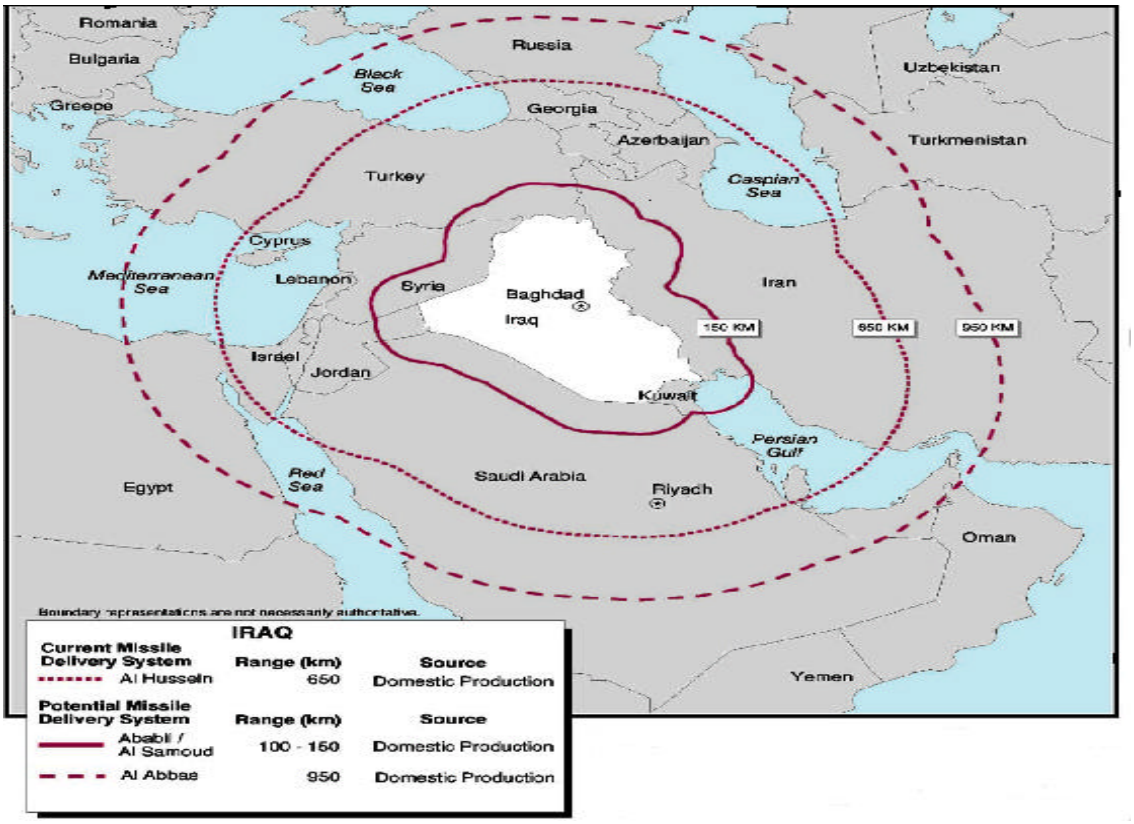

Figure 1: Estimated Ranges of Current and Potential Iraqi Ballistic Missiles.[30]

As addressed in Figure 1, Turkey's major cities including Ankara, Adana, and Iskenderun is within the range of Iraqi ballistic missiles. Therefore, it is possible that Iraq might have upgraded its secret arsenal of medium-range missiles since the abrupt end of UNSCOM inspections in December 1998. According to some experts, the Iraqi goal may be to achieve long-range and intercontinental ballistic missile capability and to strike targets as far as the United States.

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[29] Ibid.
[30] *Proliferation: Threat and Response*, p. 41.

C. POTENTIAL FLASHPOINTS

Turkey has numerous issues with Iraq that remain unresolved and risk confrontation. Most Turkish decision makers still recall Saddam Hussein's belligerent posture against Turkey. Only three months before the August 1990 invasion of Kuwait, Saddam Hussein had threatened the visiting Turkish Prime Minister, Yildirim Akbulut, stating that diminishing U.S. Middle East involvement would leave Turkey without an ally in the region: "NATO is disintegrating. Your friend, the United States is losing power…. Nobody listens to the U.S. anymore. She cannot help you."[31] Even if the Saddam regime were to change, the memory of Turkey's Gulf War role and the disputes over the Euphrates and Tigris are likely to remain potential irritants, and thus potential triggers for Iraqi use of WMD, in future Turkish-Iraqi relations. The current status of relations and the potential sources of conflict between Baghdad and Ankara, which could trigger a CBW use against Turkey, are analyzed below.

1. Turkey's Role in the Gulf War

During the Gulf War, Turkey played a crucial role in forcing Iraq out from Kuwait by enabling U.S. aircraft to fly sorties against Iraq from Turkish airbases, as well as by establishing of a safe heaven for Iraqi Kurds north of the 36th parallel under Operation Provide Comfort (OPC) launched in April 1991.[32] This also meant that for the first time in Turkey's republican history Iraq was attacked from Turkish soil; although Turkish forces did not participate in the military actions.[33]

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[31] Saddam Hussein's statement to Turkish Prime Minister Yildirim Akbulut, quoted in, Kemal Kirisci, "Post Cold-War Turkish Security and The Middle East," *Middle East Review of International Affairs*, Issue no.2, 1997, p. 3.
Available online: https://www.cc.columbia.edu/sec/dlc/ciao/olj/meria/meria797_kirisci.html.
For a background anlysis, see Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," in Barry Rubin and Kemal Kirisci eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), pp. 93-113.

[32] During the 1991 Gulf War, by bringing the parliament to pass an extended war powers bill on January 17, 1991, President Turgut Ozal even opened the way for the establishment of a second front from the north. The threat of Turkish intervention by the deploying thousands of Turkish troops to the Iraqi border was both aimed at tying down tens of thousands of Baghdad's troops in the northern Iraq and deterring a potential Iraqi missile attack on Turkey. For a detailed analysis see, Kemal Kirisci, "The Future of Turkish Policy toward the Middle East,"

[33] Heinz, Kramer, *A Changing Turkey: The Challenge to Europe and the United States* (Washington: Brookings Institution Press, 2000), p.119.

Since then, Turkey's role in the Gulf War has deeply affected its relations with Iraq. Iraqi president Saddam Hussein repeatedly has accused Turkey of treason and treachery by assisting the coalition against Iraq in the war. This Iraqi resentment, in itself largely explains the Iraqi support for the PKK. Saddam Hussein has been critical of Turkey's policy of permitting the Incirlik airbase to be used by U.S. and British planes striking Iraqi targets. Turkey's role in expelling Iraq from Kuwait instilled bitter grievances in the Iraqi mindset.

2. Iraqi Support for PKK Terrorism

Saddam Hussein's belligerent posture against Turkey is not limited to threatening statements. He has not hesitated to support the PKK (Kurdistan Worker's Party) terrorist groups by allowing it operate from Iraqi soil, and by letting them establish training camps and bases in northern Iraq. In 1998, Saddam openly allowed the PKK to open an office in Baghdad and has been extending his growing support to it. According to intelligence sources PKK agents are also being provided military and logistical support form the Saddam regime to operate against Kurds in northern Iraq loyal to Ankara.[34] Iraq also repeatedly criticizes Turkey's many occasional anti-PKK incursions into northern Iraq, arguing that it violates Iraq's territorial integrity. For example, in March 1995,Turkey staged a large military offensive in northern Iraq to clear the area of the PKK presence.[35] This caused much Iraqi criticism. Complaining of the violation of its territory, it demanded the quick withdrawal of the 35,000 Turkish troops from the region. Despite strong criticism from the Iraqi government and various Arab countries, by May, Turkey started another of its large military operations to destroy PKK bases in northern Iraq. For more than six weeks, Turkey continued the operation with about 50,000 troops and strong air support. It can be assumed that since then a small number of Turkish troops has stayed in Iraqi territory and from time to time have been reinforced for operations against the PKK bases.

In return, Iraq sought to mobilize Arab support against the repeated incursions into northern Iraq of the Turkish Army with the declared aim of fighting the PKK.

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[34] "Turkey Ends Military Mission In Northern Iraq," Middle East Newsline, Vol. 3, No. 346, 3 September 2001. Available online: www.menewsline.com.

[35] Heinz, Kramer, A Changing Turkey: The Challenge to Europe and the United States (Washington: Brookings Institution Press, 2000), pp. 117-129.

Turkish military incursions, the most recent of was in September 2001, target PKK terrorists in northern Iraq harbored by the regime of President Saddam Hussein and include air and ground attacks by thousands of Turkish troops on suspected PKK installations in northern Iraq. [36] The potential future tension over Iraqi support for PKK terrorism and Turkish military operation in northern Iraq suggests that a PKK-related clash with Iraq, which could trigger the deployment of NBC-tipped Iraqi missiles against Turkey, is not beyond imagining.

3. Use of Turkish Bases

In December of 1998, Saddam's regime once again had become a threat to Turkey and its neighboring countries, so Turkey has permitted the use of its airbases by U.S. and British planes. The use of Incirlik airbase in bombing Baghdad and suspected WMD production facilities in Operation Desert Fox as well as the United State's constant bombings of the Iraqi military installations, received harsh criticism from the Iraqi leader and brought the two countries on the brink of confrontation.

In February 1999, Iraq actually threatened to attack Turkey if it continued to permit the United States and Britain to use its bases and territory.[37] The UNSCOM inspections were interrupted. As a result, the efforts to eliminate Iraq's weapons of mass destruction capabilities have only been partly successful and it became obvious to everyone that Iraq had succeeded in retaining some its warmaking capabilities. Thus, Turkish authorities for the second time requested air defense assets since the 1991 Gulf War, and a battery of Patriot missile systems was deployed permanently to Turkey in January 1999.[38]

4. Water Conflict

The ongoing water dispute over water sharing of the Euphrates and Tigris rivers continues to deteriorate the two countries' relations. Both Iraq and Syria is heavily dependant on the waters of the Tigris and Euphrates, and the impact of the Southeastern

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[36] "Turkey Ends Military Mission In Northern Iraq," *Middle East Newsline*, Vol. 3, No. 346, 3 September 2001. Available online: www.menewsline.com

[37] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," in Barry Rubin and Kemal Kirisci, eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 94.

[38] Heinz, Kramer, *A Changing Turkey: The Challenge to Europe and the United States* (Washington:

Anatolia Project (GAP) could ultimately reduce the flow of fresh water to Syria and Iraq, as it approaches full development.

Security conditions in the Tigris-Euphrates basin are unstable and the potential for "water wars" is still present.[39] In fact, such a scenario came close to reality when Turkey stopped the flow of the Euphrates to Syria and Iraq in January 1990 for one month in order to fill the Ataturk Dam. It alarmed and agitated Iraq and Syria. They called upon the Arab world to adopt a unified collective stand against Turkey. Iraqi analysts described it as an "act of war" and stated that, "Turkey could not be the friend of some Arabs and the enemy of the others. " [40]

The water dispute has far-reaching political and strategic ramifications, since Iraq and Syria responded by escalating their support for PKK terrorism by proxy against Turkey with the aim of inducing Turkey to solve the water problem in their favor. With the water issue, Turkey began to be seen as an immediate and direct threat to Arab security—especially to Syria and Iraq.[41]

5. Turkish-Israeli Military Cooperation

The Turkish-Israeli Alliance that materialized in 1996 caused Iraq to see Turkey as more tangible and more immediate strategic threat to its security. The Turkish-Israeli military cooperation virtually brought Israel to border of Iraq since Israeli reconnaissance flights near the Turkish-Iraqi border in the Turkish airspace and the reported installation of Israeli Intelligence and listening posts in northern Iraq could easily monitor the mobile Iraqi missile launchers as well as Iraqi troop movements which would be necessary for Israeli counterforce operations against Iraq. In July 1997, President Saddam Hussein accused Turkey of doing everything " to keep the (Iraqi Kurdish) region outside the control of the Iraqi state, by hosting and aiding the armies of the U.S., Britain and France and by facilitating the task of Western and Zionist spies to roam in that part of Iraq." [42]

Brookings Institution Press, 2000), p.195.

[39] Frederick M. Lorenz and Edward J. Erickson, *The Euphrates Triangle: Security Implications of the Southeastern Anatolia Project* (Washington: National Defense University Press, 1999), p. 1.

[40] Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No.48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 2001), p. 63.

[41] Ibid, p.65.

[42] Ibid, p. 66.

The Turkish-Israeli Alliance caused Iraq to bring rapprochement to its archenemy, Iran, and its long-standing rival, Syria, arguing that the Alignment endangered all three countries. Hence there was a need to mend fences and unite forces against the Turkey-Israeli Alliance.[43]

D. THE LIKELIHOOD OF WMD USE AND POTENTIAL TARGETS

Iraq's acquisition of WMD capabilities threatens Turkish security. Several issues are worth highlighting: 1) the likelihood of Iraqi CBW use against Turkey; 2) the most likely targets for CBW and missile use; and 3) the strategic and operational implications of Iraqi CBW use for Turkish policy and freedom of action.

The current "reach" of ballistic missiles deployed by Iraq suggests that Turkey as a regional neighbor could be one of the most likely victims of WMD use.[44] When the overwhelming significance of potential sources of conflict and the rivalry between Turkey and Iraq is considered, the prevailing Iraqi WMD threat is even more apparent.

Recent history points to the relatively unconstrained Iraqi use of ballistic missiles and chemical weapons in regional conflicts within Turkey's southern periphery, including the Iran-Iraq War and the Gulf War. Moreover, Iraq's experience with flagrant CW use during the Iran-Iraq War and the international community's failure to punish Iraq for its use of CW in the Iran-Iraq War, most likely emboldened the Iraqi decision makers and may have contributed to Baghdad's pugnacity. That may also have fostered Iraqi's aggressiveness toward its neighbors to pursue its objectives. In addition, this attitude may be reinforced by the belief of some senior Iraqi leaders that aggression in the region against its neighbors would be tolerated, as long as Iraq did not directly threaten U.S. or Western interests and its conduct of CBW use did not exceed certain thresholds, such as using CW against its own innocent Kurdish population.[45]

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[43] Ibid.

[44] Ian O. Lesser and Ashley Tellis, *Strategic Exposure: Proliferation Around the Mediterranean* (Santa Monica, Calif.: RAND, 1996), p. 24.

[45] Javed Ali, "Chemical Weapons and the Iran-Iraq War: A Case Study in Noncompliance", *Nonproliferation Review* 8(1): 43-58.

From a military perspective, Iraqi doctrine for CBW use justifies Iraq's intentions to use them when necessary.[46] Iraqi doctrine focuses on how to deliver these weapons on strategic targets and how to operate in a contaminated environment, suggesting that Iraqis might be considering of using CBW in future contingencies.[47] According to McCarthy and Tucker, during the final phases of the 1980-1988 Iran-Iraq War, Iraqi commanders integrated chemical weapons into Iraqi offensive battlefield operations:

> The Iraqis laid down persistent mustard agent in the Iranian forces' rear area and then bombarded the front with the nonpersistent nerve agent sarin, so that Iranian troops retreating from the sarin-contaminated area would be exposed to the mustard agent as well … Iraq also employed VX nerve agent during the battle of Al Fao in long-range artillery shells and bombs dropped from aircraft, causing panic among the Iranian Revolutionary Guards. Iraq's most devastating use of chemical weapons took place on Majoon Island in June 1988, when front-line Iranian defensive positions were subjected to an artillery barrage delivering a mixture of hydrogen cyanide, nerve agent, and high explosives. Iraqi helicopters and fighter aircrafts joined the attack, dropping mustard and nerve agent on command centers, logistics sites and reserve forces in the Iranian rear.[48]

Moreover, the forward deployment of chemical weapons munitions and decontamination sites into certain parts of Iraq during the 1990-1991 Gulf War indicates that at some point Iraq was considering using CW against the Coalition forces.[49] Should any contingency arise in the future, the Iraqis possibly would follow the same procedures. Therefore, determining under what circumstances Iraqi operational doctrine for CBW use might be applied to Turkey requires the following scenario-based analysis:

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[46] Iraqi military manuals suggest that Iraq had an operational doctrine for the use of chemical as well as incapacitating and lethal biological weapons. Moreover, the Iraqi CBW doctrine and strategy indicates that, during the Gulf War, Iraq had the capability to carry out chemical and biological weapon strikes against Coalition targets. In addition, during the Gulf War, according to some Iraqi officials, authority to launch missiles was predelegated to field commanders in the event that Baghdad was hit by nuclear weapons. For a detailed analysis see, Timothy V. McCarthy and Jonathan B. Tucker, " Saddam's Toxic Arsenal Chemical and Biological Weapons in the Gulf Wars," in Peter Lavoy, Scott D. Sagan and James J. Wirtz, eds. , *Planning the Unthinkable*, pp. 47-78.

[47] McCarthy and Tucker, " Saddam's Toxic Arsenal," p. 62.

[48] Ibid, p. 65.

[49] Ibid, p. 72

1. Large-Scale WMD Use against Turkey in a Regional Conflict

Turkey supported the Coalition's Operations in various ways during the Gulf War and allowed the use of the Incirlik Airforce base during Operation Desert Fox. Any of these actions might have elicited an Iraqi response, including missile strikes carrying chemical and biological warheads against Turkey. A frustrated Saddam Hussein—determined not to tolerate U.S. and British strikes originating from Turkish bases—could have decided to launch chemical or biological war-headed Scuds on specific strategic targets, such as the Incirlik airbase. In addition to retaliatory response, these missiles could have been used for tactical purposes to prevent decapitating strikes on Iraqi strategic targets. Indeed, in February 1999, such a scenario came very close to reality when Iraq threatened to attack Turkey if it continued to permit the United States and Britain to use its bases and territory to bomb Iraq.[50]

In the future, similar contingencies might occur. This could be either as a result of the Iraqi noncompliance with the UN sanctions or as a result of Iraqi violation of the U.S. mandated no-fly zone to the north of the 36th parallel. Should the Turkish bases again be used for strikes against Iraqi installations, the prospects for Iraqi retaliation against Turkey would be much higher, possibly this time with NBC-tipped Iraqi missiles.

In the same manner, political turmoil in Iraqi could well result in a general deterioration of relations between Turkey and Iraq. Against this background, Turkey's growing exposure to the retaliatory consequences of Iraqi missiles in theory could become a real vulnerability in practice. Once the Turkish cities and strategic assets become hostage to Iraqi retaliation and once Saddam Hussein is convinced that he has established the strategic equality to Turkey's conventional superiority, he could exert a more aggressive stance against Turkey. This could be aimed at inducing Ankara to solve the water problem or other problems at hand. The deterioration in relations, as a result, might instigate old animosities.

All these events can act as a pretext or a trigger for a large-scale CBW attack on Turkey. Chemical or biological weapons could be used against Turkish troops on the extended battlefield. Iraq could employ different chemical or biological agents for both

[50] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," p. 94.

military and political objectives. Since any kind of confrontation with Turkey might possibly invoke a NATO response under Article 5 of the NATO provisions, Saddam Hussein could resort to chemical or even more likely biological weapons to disrupt regional NATO military operations and to prevent formation of an effective NATO military coalition that could challenge or reverse Iraq's aggression against Turkey.

2. Lethal or Non-Lethal CBW Use against Deployed Turkish Forces

In one of Turkey's regular anti-PKK incursions designed to clear the area of the PKK presence in northern Iraq, a revengeful Saddam Hussein might consider the operation as a Turkish provocation and a violation of Iraq's territorial integrity or at the very extreme point, a pretext for "Turkey's designs" to take back the oil-rich Kirkurk-Mosul region.[51] In such a mindset, he might decide to employ chemical or biological weapons in retaliation against Turkish forces whose number sometimes reaches 50,000 troops. By using non-lethal CW or incapacitating biological agents against Turkish troops operating in northern Iraq, Saddam Hussein might attempt to decisively delay or disrupt a national-based response by Turkish forces to his highly repressive activities. According to McCarthy and Tucker, "Iraqi forces have the operational expertise on CW use, with an ability to tailor the delivery of chemical agents to specific tactical situation."[52] In this regard, chemical warheaded missiles or aerial-bombs might be used against logistic assets, assembly areas and command and control nodes in Turkish rear during the large PKK-related Turkish offensives into northern Iraq. This action could be aimed at cutting the logistic and communication lines of Turkish troops operating deep inside northern Iraq and put them in risk of being encircled by Iraqi forces or even PKK terrorist groups.

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[51] Kirkurk-Mosul region of Iraq was a part of the Ottoman Empire untill the early 19th Century and was relinquished to Iraq in 1926 under British pressure in 1926. From time to time Iraqi leaders argue that Turkey still has old claims on the oil-rich Kirkurk-Mosul region. During the Iran-Iraq War, the Turkish press repeatedly suggested that Turkey might have to enter Iraq and even take over the oil regions in order to protect the pipeline from Kurdish insurgents, as the Iraqi government was unable to protect it. Turkey reportedly notified Iran and the United States officially in 1986 when Iraq was performing badly in the war, that it would demand the return of Mosul and Kirkurk in the event of the collapse of Iraq. Turkish interest in the territory of Mosul was also buttressed by the important ethnic presence of 300,000 to 500,000 "Turks" who live in the region. See Graham E. Fuller and Ian O. Lesser, *Turkey's New Geopolitics*, p. 24.

[52] Timothy V. McCarthy and Jonathan B. Tucker, " Saddam's Toxic Arsenal: Chemical and Biological Weapons in the Gulf Wars," in *Planning the Unthinkable*, p. 62

A small number of Turkish troops stay in northern Iraq and is reinforced for operations against the PKK bases from time to time.[53] In the outbreak of the hostilities, Saddam Hussein might predelagate the chemical release authority to his field commanders to deny the Turkish troop presence. He might also approve his field commanders' chemical fire requests to prevent the reinforcement of these troops. In this way, Iraqi chemical weapons also could be used as strategic weapons to demoralize and provoke fear on Turkish forces rather than inflicting battlefield casualties. By firing chemical munitions and artillery rounds on these troops, Saddam Hussein might want to send a signal both to Turkey and United States to take seriously Iraq's determination to fight the outside forces—who were trying to keep northern Iraq outside the control of the Iraqi state.

Also according to McCarthy and Tucker, Iraqi doctrine for biological weapons suggests that Iraqis might be planning an offensive use of biological agents as a force multiplier for countering a conventionally superior adversary, such as Turkey.[54] In the same chapter, McCarthy and Tucker contend that,

> Iraqi military manuals suggest that Iraqi military strategists seek to inflict nonfatal casualties so as to overburden the enemy and damage troop morale. These manuals also suggest that Iraqi military considers covert biological weapons operations behind the enemy lines.[55]

Keeping the Iraqi operational doctrine for BW use in mind, the Iraqi leader could even consider early use of incapacitating agents such as Venezuelan Equine Encephalitis (VEE) and Q Fever or lethal biological agents, such as anthrax by contaminating the natural water resources in Northern Iraq before Turkish troops enter the region.

3. Terrorist Use of CBW

Terrorism might be another way in which Saddam Hussein could use as a proxy to deny the Turks from the region. As the recent Anthrax cases in the United States suggest, it is almost impossible for an adversary to deny the terrorist use of an incapacitating or lethal biological agent. Thus, BW use through third party is much more

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[53] Heinz Kramer, *A Changing Turkey*, p.122

[54] McCarthy and Tucker, " Saddam's Toxic Arsenal," p. 62.

[55] Ibid.

likely to be the path chosen by Saddam Hussein in a proxy war against Turkey. He could easily deliver some biological agents to PKK terrorists. These terrorists could contaminate the water and other natural resources to inhibit advancing Turkish troops. Since Turkish operations usually take place to clear the area of PKK presence every fall and spring, looking at the earlier troop movements when and from which direction the troops will enter northern Iraq can easily be predicted. As Khidir Hamza, the author of *Saddam's Bombmaker: The Terrifying Inside Story of the Iraqi Nuclear and Biological Weapons Agend*a, recently put it, "What will keep Saddam Hussein from delivering some BW agents to a PKK terrorist by putting it in a truck and delivering it to the terrorists in Turkey?"[56]

Saddam Hussein also may consider dispersing two non-lethal biological agents-VEE and Q Fever simultaneously. [57] Since the incubation period for Q Fever would be within the recovery period for VEE, this would extend the period in which Turkish troops would be incapacitated. The use of two non-lethal agents simultaneously would also complicate diagnosis and treatment. This would give sufficient time for Saddam to prepare for an offensive against the incapacitated Turkish troops.

Saddam Hussein might prefer the use of non-lethal agents such as VEE or Q Fever to limit the risk associated with creating large-scale fatalities among Turkish troops. This could be aimed at preventing a harsh NATO or bilateral U.S. and Turkish response. By releasing sufficient amounts of combined dry agents or VEE at each water source in the region just days before Turkish troops come to the region, the Iraqis could incapacitate or kill the majority of the troops operating in the region as well as the innocent Iraqi Kurdish population living in the area. Either Iraqi NBC teams or PKK terrorists trained by Iraqi officials for this mission might use BW agents in such a way. One should recall that Saddam Hussein did not hesitate to use chemical weapons against his own Kurdish population in Halabjah in 1988. Therefore it would be reasonable to

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[56] Interview with Khidir Hamza, Monterey, Calif., 7 September 2001

[57] VEE is a highly infectious virus with an incubation period of 1 to 6 days after which individuals experience headaches, reduced sensibility, convulsions and paralysis accompanied by a high fever over a 3 to 10 day illness. Q Fever is an acute but rarely fatal disease with an incubation period of 10 to 26 days after which headaches, weaknesses, severe sweating, coughing and chest pains appear. For a detailed analysis of the incubation periods for different types of lethal and non-lethal agents see, U.S. Government, *The Worldwide Biological Warfare Weapons Threat*, (Washingthon D.C.: U>S. Government Printing

contend that harming the civilian Kurdish population would not be a high concern for Saddam. For him, ending the constant Turkish military operations in Northern Iraq would possibly be a more important priority.

Some experts believe that such a scenario is highly unlikely, arguing that Iraq would be constrained from using BW fearing costly repercussions. However, Turkish strategic planners should not dismiss such a possibility while planning operations in the region. According to Khidir Hamza, a direct CBW use by Saddam Hussein against Turkey in such a way is quite unlikely except indirectly by supporting the terrorist use:

> I doubt that Saddam will use CBW in such a condition. Its repercussions could be very bad. However, there is the evidence that Saddam used CW [against the Iranians] when he could. But the Iranians were inside Iraq at that time and didn't have the retaliation capabilities. [58]

The evidence suggests that if Saddam Hussein used such weapons because Iran was within the Iraqi territory and Iran lacked the retaliation capabilities in kind, then he might use it against Turkish forces operating in northern Iraq, for Turkey also lacks the same retaliation capabilities.

In the current U.S.-led war on terrorism, the threat of WMD use by terrorists is even more likely. As a sign of its full support for the U.S.-led war on terrorism, Turkey has allowed the use of its airspace for U.S. and British warplanes heading for Afghanistan. At the same time, U.S. and British jets have also increased their patrols of the northern Iraq no-fly-zone from the Turkish airbase in Incirlik. There is also a possibility that U.S. may strike the terrorist cells in Iraq, if Washington is convinced that the Iraq supports, the terrorist organization, Al-Queda. Under such a circumstance, Saddam Hussein may use the current offensive against Afghanistan as pretext to attack Turkey–this time with weapons of mass destruction. Defense analysts now report that Turkey feels vulnerable to a missile attack amid the U.S.-led offensive in Afghanistan. According to intelligence reports Saudi billionaire fugitive Osama bin Laden has as many as 100 agents in Northern Iraq near the Turkish border.[59] Recently, Ankara is concerned

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Office, 2001), p. 24.

[58] Interview with Khidir Hamza, Monterey, Calif., 7 September 2001.

[59] " Turkey Feels Vulnerable to Missile Attack," *Middle East Newsline*, 10 October 2001. Available online: www.menewsline.com

that forces aligned with terrorist Osama bin Laden could strike Turkey with missiles.[60] In fact, the United States is worried about such a possibility, too. Washington has officially warned Baghdad against moving any troops toward the Turkish border in the Kurdish autonomous zone in northern Iraq and attacking its neighbors with weapons of mass destruction and thus, against exploiting the current situation in Afghanistan.[61]

4. Conventional or NBC-tipped Missile Attacks against GAP Facilities

The most likely WMD use against Turkey could occur as a result of the ongoing water dispute. If Turkey reduces or cuts off the water of the Euphrates and Tigris rivers in order to fill the new constructed dams, as was the case in 1990, tension between the two countries could increase, resulting in a concerted Iraqi and Syrian hostility and even an ultimatum to pressure Turkey to stop reducing the flow of water. Already confident about his WMD capabilities, Saddam Hussein might directly threaten to strike the dams and hydropower plants of the GAP project, arguing that he would no longer tolerate the Turkish water policies. Such a confrontation could generate "water wars" in the region, with the involvement of Turkey, Iraq and Syria. If such a situation arose, Ankara is well placed to achieve an operational success against a conventionally inferior Iraq. If the situation worsens, Saddam, recognizing that defeat was inevitable, might trigger Iraqi CBW use against Turkey. Therefore, conceivably, Iraq might employ NBC-tipped Scud missiles against Turkish targets, possibly including Ankara. In this case, Adana and Iskenderun would be extremely vulnerable to Iraqi missile attacks, including NBC-tipped Scuds.[62]

In the case of Ankara's curtailing the waters of the Euphrates and Tigris rivers either by filling the existing dams or by diverting water to the irrigation channels or (as a part of potential contingency planning) to the Mediterranean, Iraqi regime might deliver lethal biological agents such as anthrax to the PKK terrorists and these resurgents could contaminate the dams of the GAP, including the largest Ataturk Dam, which supplies the

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60 Ibid.

61 Ibid.

62 Adana and Iskenderun are the southeast Anatolia's two densely populated cities. Iskenderun is also a strategic naval port where the Iraqi oil pipeline reaches the Mediterranean and serves as an outlet for Iraqi oil to the world markets. Turkey obtains nearly 80 percent of its oil requirement from the Iraqi oil-pipeline.

water of the whole Southeastern Anatolia, and claim that if the Iraqi people can not use the Turkish water, neither can the Turks.

Some Iraqi experts believe that if there is any threat to Turkish dams in the GAP region, a Turkish contingency plan will divert the water to the Mediterranean. In such a case, Saddam Hussein might be planning covert use of BW agents to contaminate the Turkish dams to deny these resources to Turks in the region. As Khidir Hamza put it, "if there is a contingency between Iraq and Turkey, Iraq may strike the Turkish dams possibly with missiles. "[63]

E. IMPLICATIONS FOR TURKISH POLICY AND FREEDOM OF ACTION

Increased Turkish security exposure to Iraqi WMD threats may have operational as well as diplomatic consequences. In addition to the perceived threats from an Iraqi WMD arsenal and its direct impact on military defense and planning, the political implications of such worst-case scenarios becoming an inevitable reality are more alarming than the perceived vulnerability- especially in the case of a nuclear Iraq.

A nuclear bomb in the hands of Saddam Hussein would be totally intolerable to Turkey. Nuclear weapons would inflate his self-confidence and encourage Saddam Hussein to adopt a more aggressive attitude toward Turkey. First of all, he would not be as tolerant as he is, to Ankara's current policies of allowing the West use to Turkish airbases to strike Iraqi targets, or to Turkey's water policies or military operations in northern Iraq, all of which are considered as direct threats to Iraqi interests.

According to Khidir Hamza, Saddam Hussein would more aggressive and intolerant:

> I doubt the Turks would use water weapon against Iraq … I doubt the Turks would conduct military operations in northern Iraq, and I doubt the Turks would allow the use of its airbases and facilities to strike Iraq by U.S. and Britain, if Iraq had the nuclear bomb. Saddam would openly support the Kurdish minority in Turkey in various ways and use terrorism as a proxy against Turkey. Turkey would not dare to confront Iraq. A nuclear bomb would give Saddam impunity for what he does.[64]

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[63] Interview with Khidir Hamza, Monterey, Calif., 7 September 2001.

[64] Ibid.

Moreover, should a future crises similar to the Gulf War erupt in the region, unlike in 1990-1991, Turkey's freedom to fully implement the UN sanctions and its active support for Coalition operations would be quite limited even with full NATO backing and sufficient confidence in the NATO security guarantee, including its nuclear dimension. In the case of a nuclear Iraq, Turkey would probably face a more pronounced strategic dilemma, which would result in Turkey assuming a more conservative posture with the U.S. and NATO policies in the region. At the same time, the increased exposure of cities to Iraqi retaliation would complicate the prospects for the U.S. access to Turkish facilities for expeditionary operations in northern Iraq, leaving the United States without one of the secure rear areas from which to project power. Even, short of war, during the increasing hostilities, as a result of Turkey's geographic proximity and thereby of vulnerability, Saddam could be selected Turkey as a target to strain the Alliance's cohesion when, for example, a joint exercise is conducted in the Mediterranean. Similarly, in the context of "force projection" scenarios, finding a staunch regional ally like Turkey would be much more difficult for U.S. and the West in general, as Ankara would be concerned about a potential Iraqi retaliation. The prospects for access to Turkish bases would then depend, in part, on providing reasonably effective air defenses to Turkey against potential Iraqi missile attacks.[65]

Ankara's concerns about Iraqi intentions and WMD and missile risks from Iraq surfaced in the recent U.S. confrontation with Iraq. Ankara has been tolerant but unenthusiastic about allowing the use of the Incirlik airbase for offensive air operations in the Gulf. Even the Allied aircraft strikes within the rules of engagement of Operation Northern Watch were viewed with concern by Turkey's leadership. Thus, Turkish policymakers have tolerated, but are clearly uncomfortable with the use of Incirlik airbase for strikes against Iraqi targets.[66] Overall, the Turkish reluctance results from the Turkish desire to avoid unpredictable regional consequences of a conflict with Iraq.[67]

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[65] Ian O. Lesser, *NATO Looks South*, p. 24.

[66] According to U.S. European Command (EUCOM) figures cited in *European Stars and Stripes*, July 27, 1999, p.2, between late December 1998 and July 1999, as a part of Operation Northern Watch, U.S. and British aircraft operating from Incirlik struck Iraqi targets in the northern fly-zone on more than 60 occasions.

[67] *NATO Looks South*, p. 40.

All of the potential scenarios analyzed above suggest that, although highly unlikely, Iraq could resort to WMD against Turkey under certain circumstances. As past evidence of Iraqi WMD use proved, Iraqi leaders lack morals when it comes to power politics. No matter who is in power, be it Saddam Hussein or someone else, Iraqi regime might use asymmetric means to pressure Turkey. Iraq is desperately short of access to a sea and thus, is strategically dependent on Turkey for its oil exports as a source of revenue. Therefore, Baghdad would probably use its asymmetric WMD capabilities to secure this source and to equalize a conventionally superior Turkey.

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III. IRANIAN WMD THREATS TO TURKEY

A. INTRODUCTION

Of Turkey's neighbors believed to be pursuing weapons of mass destruction (WMD) and advanced missile programs, Iran poses unique dilemmas for the strategic calculations of Turkey. On the one hand, defense analysts believe that Iran's pursuit of WMD and advanced missile programs stems from its serious, and somewhat legitimate concerns with neighbors, namely Iraq, Israel and Afghanistan. Thus, Iran's intentions are not directed against Turkey explicitly. On the other hand, Turkish concerns heighten as reports of Iranian attempts to acquire long-range delivery capabilities for WMD use are revealed, suggesting that Iran's motives exceed the innocent rationale of homeland defense. Iranian capabilities and intentions force Ankara to consider Iran a part of Turkey's security equation. Some analysts now argue that since Iran is set to replace Syria as the leading regional threat, Iran has also become a planning factor for the Turkish military.[68]

Many of the Turkish concerns with Iraq could also apply to Iran, even in the event of a PKK-related clash. Over the last few years, the crises came to the brink of military confrontation on a number of occasions. From time to time tensions heightened between Tehran and Ankara as a result of Turkey's discontent with Iranian support for the PKK, reported Turkish strikes against PKK targets in Iranian territory, the competition for influence between Turkey and Iran (fueled by the dangers of Azeri separatism), and the clash of rival Islamic Iranian and Turkish secularist ideologies.[69] Any of these sources of friction could lead to a Turkish-Iranian armed conflict, especially in the south Caucasus. Given the possibility of a Turkish-Iranian military clash, Iranian officials might consider weapons of mass destruction as a credible deterrent against Turkey.

Iranian nuclear and ballistic missile programs are a definite source of growing concern in Turkey. These concerns reinforce Ankara's interest in intelligence and missile defense cooperation with Israel and the United States. Ankara's increasing exposure to

[68] Ian O. Lesser, *NATO Looks South*, p. 23.

[69] Richard Sokolsky and Tanya Charlick-Paley, *NATO and Caspian Security: A Mission Too Far?* (Santa Monica, Calif.: RAND, 1999), p. 44.

Iran's longer-range ballistic missiles also encourages a conservative view of NATO's defense posture, including its nuclear policy, and a strong interest in counterproliferation as a part of the new Turkish security agenda.[70]

This chapter focuses on Iranian WMD capabilities and potential threat scenarios. Thus, it addresses some key questions that confront Turkish defense planners:

- What is Iran doing in the NBC and delivery system arena, and why is it pursuing these objectives?
- What is the status of Turkey's relations with Iran and what are the potential flashpoints?
- What is the likelihood of Iranian WMD use against Turkey? Under what circumstances might Iran use nuclear, biological and/or chemical weapons against Turkey?
- What are the implications of these capabilities for Turkey?

B. CAPABILITIES

Iran claims to be in full compliance with its treaty obligations. However, recent intelligence reports on proliferation describe Iran as "one of the most active countries seeking to acquire WMD and advanced conventional weapons technology from abroad."[71] However, Iran's WMD and missile efforts are at different stages and pose different concerns for the neighboring states. Some programs are in preliminary stages and provide Tehran an option to develop an operational capability and the ability to export weapons and production capability.

Iran has developed several lines of artillery rockets, ballistic missiles and unmanned aerial vehicles as potential systems for NBC delivery, and—although Tehran is a party to the Chemical Weapons Convention (CWC)—it maintains a robust chemical weapons capability. Experts also believe that Iran may be working to acquire nuclear weapons technology and offensive biological warfare capabilities. [72]

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[70] Ian O. Lesser, *NATO Looks South*, p. 31.

[71] C. Richard Nelson and David H. Saltiel, " Beyond Containment: Managing Proliferation Issues with Iran," *Policy Paper*, The Atlantic Council of the United States, September 2001, p. 9.

[72] "Overview of WMD capabilities-Iran," Monterey Institute of International Studies, *Center For Nonproliferation*. Available online: http://cns.miis.edu.

As a victim of WMD aggression and missile attacks, Iran seeks to deter its opponents as well as to gain more power in the Persian Gulf and Caspian Sea regions by acquiring and developing WMD capabilities.[73] Tehran's motives for seeking nuclear weapons also include its rivalry with Iraq and its desire for a deterrent against a major power intervention. Turkey's NATO membership and its close strategic alliance with Israel are also interpreted by Tehran as potential threats. [74]

Iran's WMD programs significantly affect the strategic environment in the entire Middle East. In addition to undermining the international non-proliferation norms, these programs pose a direct military threat to Iran's neighbors, such as Turkey, as well as to U.S. military forces deployed there. Turkey is considered to be one of the potential regional targets of Shabab-3, a 1350 km-range ballistic missile which was successfully test-fired for the second time in July 2000.[75]

Some analysts believe that Iran would only resort to weapons of mass destruction when the regime's survival is in question, yet evidence throwing light on Iranian intentions calls such an argument into question. Iran's development and use of chemical weapons in the 1980-1988 Iran-Iraq War and its storage of chemical weapons on Abu Musa, an island in the Persian Gulf off the coast of Dubai, suggest that Tehran would use such weapons long before the regime's security is in doubt. Even if Iran's clerical leaders might consider WMD as a legitimate defense requirement, by merely sustaining offensive nuclear, biological and chemical capabilities and by implicitly stating that it has the ability to retaliate with unconventional means, Iran might be expecting to gain leverage over the neighboring states.[76]

1. Nuclear Weapons Program

Iran has "an organized structure dedicated to developing nuclear weapons." To this end, Iran is "trying to establish the capability to produce both plutonium and highly

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[73] Ibid.

[74] Amin Tarzi, "Iran's Missile Tests Sends Mixed Messages," Monterey Institute of International Studies, *Center For Nonproliferation*, 15 August 2000. Available online: http://cns.miis.edu.

[75] Ibid.

[76] W. Seth Carus, "Iran and Weapons of Mass Destruction," *Meria Journal*, Vol. 4, No. 3, September 2000, p. 1.

enriched uranium" in an effort to produce fissile material for a nuclear weapon.[77] At the same time, Iran seeks to acquire fissile material and nuclear technology from foreign sources such as Russia, China and North Korea. In recent years, in an attempt to shorten the timeline to produce a nuclear weapon, Iran has launched a parallel effort to purchase black-market fissile material, mainly from sources in the former Soviet Union, including Kazakhstan.[78]

China and Russia have been Iran's main suppliers of nuclear technology.[79] Russia has signed an agreement with Iran and is expanding civilian nuclear cooperation, paving the way for the delivery of a nuclear reactor. According to Russian sources, Moscow is building a 1,000-megawatt VVER-1,000 nuclear power reactor for Iran at Bushehr. The accord recently signed between Moscow and Tehran includes delivery of a nuclear reactor for Iran's Bushehr nuclear facility in November 2001.[80] Some experts are concerned that this could trigger additional sales of Russian nuclear facilities to Iran. According to intelligence reports, Russian companies continue to help Iran develop nuclear, chemical, and biological weapons, in some cases by allowing Russian scientists to work at Iranian nuclear facilities.[81]

China has also been active in supplying nuclear technology to Tehran but pledged in 1997 not to sell a key facility and other nuclear technologies to Iran.[82] Beijing "also agreed to terminate cooperation on a uranium conversion project," which could "have

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[77] *Proliferation: Threat and Response*, p. 35.

[78] Iranians are believed to have contacted officials at nuclear facilities in Kazakhstan on several occasions. For example, in 1992, Iranian officials unsuccessfully attempted to buy enriched uranium and beryllium metal from the Ulba Metallurgical Plant at the production complex at Ust-Kamenogorsk in Kazakhistan. The intelligence reports are unclear about the type of fissile material that the Iranians were trying to obtain from Kazakhistan. However, these reports suggest that the Iranians were either pursuing purchase of low-enriched uranium (LEU) as a reactor fuel, or wanted to buy or smuggle some of the more than 500 kg of weapons-usable highly enriched uranium (HEU) stored at the complex at the time. For a detailed analysis of Iranian attempts to obtain fissile material from foreign sources, see Rodney W. Jones, Mark G. McDonough with Tobby F. Dalton and Gregory D. Koblentz, *Tracking Nuclear Proliferation*, Carnegie Endowment For International Peace (Washington D.C.: The Brookings Institution Press, 1998), pp. 169-177.

[79] *Proliferation: Threat and Response*, p. 35.

[80] " Iran to Obtain Russian Nuke Reactor," *Middle East Newsline*, 3 October 2001.Available online: www.menewsline.com.

[81] " Iran Nuclear Aid, " *Moscow Times*, 6 September 2001, p. 3. Available online: http://ebird.dtic.mil/Sep2001/e200110906iran.htm.

[82] *Proliferation: Threat and Response*, pp. 35-36.

allowed Iran to produce uranium hexafluoride or uranium dioxide, … the feedstock materials for the manufacture of weapons grade plutonium."[83]

Iran has a parallel effort to acquire "a heavy water-moderated, natural uranium-fueled nuclear reactor and associated facilities suitable for the indigenous production of weapons-grade plutonium."[84] The primary goals of Tehran's efforts are to obtain more sensitive nuclear technologies from Russia and to develop the necessary expertise and infrastructure in related nuclear technologies.

According to *Proliferation: Threat and Response*, " Iran's success in achieving a nuclear capability will depend, to a large degree, on the supply policies of Russia and China or on Iran's successful illicit acquisition of adequate quantities of weapons-usable fissile material."[85] Nevertheless, the presence of hundreds of tons of poorly secured weapons-usable nuclear material in Russia and elsewhere in the former Soviet Union suggests that the danger that Iran may be able to obtain such sensitive materials still remains. Therefore, assuming that the current trends of foreign assistance continue, Iran should be expected to become a nuclear power equipped with a long-range missile delivery system.

2. Chemical Weapons Program

Although a party to the Chemical Weapons Convention (CWC), Iran has the most active chemical warfare program in the developing world.[86] Iran is most advanced in chemical weapons, with a capability use these weapons in war and also to export them.[87] According to *Proliferation: Threat and Response*, "Tehran has manufactured and stockpiled blister, blood and choking chemical agents, and weaponized some of these agents into artillery shells, mortars, rockets, and aerial bombs."[88]

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[83] Ibid, p. 36.

[84] Ibid, p. 35.

[85] *Proliferation: Threat and Response*, p. 35.

[86] Michael Eisenstadt, *Iranian Military Power: Capabilities and Intentions* (Washington, D.C.: Washington Institute for Near East Policy, 1996), p. 26.

[87] C. Richard Nelson and David H. Saltiel, " Beyond Containment: Managing Proliferation Issues with Iran," *Policy Paper*, The Atlantic Council of the United States, September 2001, p. 9.

[88] Ibid, p. 36.

Tehran started its chemical weapons program in 1983 and produced its first agent in 1984, during the 1980-1988 Iran-Iraq War in retaliation against Iraqi CW use. Recent unclassified reports of the Central Intelligence Agency (CIA) suggest that Iran is continuing to expand and to diversify its chemical weapons program. CIA Intelligence reports also estimate that Tehran currently controls a chemical weapons (CW) stockpile of several thousand tons of sulfur, mustard, phosgene, and cyanide agents, and has the potential of producing 1,000 tons of these agents each year. [89] It is also believed that Iran is conducting research on nerve agents and has yet to produce more advanced nerve agents such as Soman, Tabun, Sarin, or VX. [90]

Iran also has first-hand experience with chemical weapons in war. Having developed chemical weapons during the latter stages of the Iran-Iraq war as a "deterrent" against Iraq, Iran's military has the tactical expertise to deliver CW to intended targets. From an Iranian perspective, self-sufficiency in armaments and the ability to retaliate are major requirements for deterring any type of future aggression against the country. [91] Therefore, regardless of the extent of its bitter wartime experiences in employing CW, Tehran has developed a large, self-sufficient CW production capability.

As a past victim and later on user of chemical weapons during the 1980-88 Iran-Iraq War, Iran must be credited with vast experience in CW use. Tehran might offer its knowledge of chemical warfare to other countries of proliferation concern. Moreover, as a country already aware of the operational, tactical, strategic and psychological advantages of using chemical weapons against enemy troops, "Iran could employ these agents during a future conflict in the region. Lastly, Iran's training, especially for its naval and ground forces, indicates that it is planning to operate in a contaminated environment."[92]

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89 Rodney Jones and Mark McDonough, *Tracking Nuclear Proliferation*, p. 177.

90 Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," p. 84.

91 Ibid.

92 *Proliferation: Threat and Response*, p. 36.

3. Biological Weapons Program

According to U.S. Department of Defense, "Iran has a growing biotechnology industry, significant pharmaceutical experience and the overall infrastructure to support its biological warfare program."[93] Tehran's efforts include seeking considerable amount of dual-use biological materials, equipment and expertise from sources in Russia and elsewhere, including some Western European companies.

Iran has an active biological warfare program, which is believed to have begun during the 1980-1988 Iran-Iraq War. Since then, Tehran seems to be pursuing offensive biological warfare capabilities. Also, its knowledge of and battlefield experience in biological warfare has increased considerably, resulting in some capacity to produce BW agents and the means for delivering them.[94] In this regard, Iran has conducted research on more lethal agents like anthrax, foot and mouth disease, and biotoxins and may have begun active weapons production technology to make dry storable and aerosol weapons. This would allow Iran to develop suitable missile warheads and bombs and covert devices.[95]

Recent intelligence reports indicate that Iran may have weaponized both live agents and toxins for artillery and bombs and may be pursuing biological warheads for its missiles. Tehran's BW activities could also involve individual saboteurs, artillery, or spray tanks on trucks, aircraft, and RPVs.[96] Russia and China has been implicated in supporting aspects of Iran's CW and BW activities. According to a December 1998 *New York Times* report, given the Iranian ties to Russian expertise, Iran might adopt agents such as Marburg, smallpox, plague, and tularemia, developed by the former Soviet BW program.[97] Nevertheless, foreign assistance and participation will be the decisive factor in assessing the level of Iran's BW program. Given the dual-use character of the materials and equipment sought by Iran, identifying and even more difficult, preventing Iran's BW program is difficult.

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[93] Ibid.

[94] *Proliferation: Threat and Response*, p. 36.

[95] Judith Miller and William J. Broad, "Bio-Weapons in Mind, Iranians Lure Needy Ex-Soviet Scientists," *New York Times*, December 8, 1998.

[96] Rodney Jones and Mark McDonough, *Tracking Nuclear Proliferation*, p. 177.

[97] Judith Miller and William J. Broad, "Bio-Weapons in Mind."

4. Ballistic Missile Program

Iran has one of the largest and most capable ballistic missile inventories in the Middle East. Tehran's arsenal mainly consists of Russian designed Scud rockets as well as modified Scuds based on a North Korean design. Currently, Iran possesses two versions of the nuclear-capable North Korea supplied Scud ballistic missile: the Mod. B (300 km range) and Mod. C (500-km range). Tehran also possesses Chinese-made CSS-8 SRBMs with an estimated range of 150 km in its inventory.[98] Iran has more than 400 surface-to-surface missiles in its inventory: including about 25 CSS-8 launchers with 200 missiles, and about 10 Scud launchers with 210 Scud-B and Scud-C missiles. These missiles have sufficient range to hit targets in Turkey, Iraq and the other states bordering the Persian Gulf.

Iran is also striving to indigenously produce its own ballistic missiles and to become a missile technology supplier state. Iran's Shehab-3 missile, a 17-ton medium-range ballistic missile (MRBM) with the capacity to carry a 1.2-ton payload and an estimated range of 1,300 kilometers, was first tested in July 1998 and became operational following a second successful test launch in July 2000. [99]

According to *Proliferation: Threat and Response*, Iran has the capability to deploy limited numbers of Shabab-3 by the Islamic Revolutionary Guard Corps (IRGC)[100]:

> Iran has built openly and publicly displayed prototypes of this MRBM [Shabab-3] and may have achieved an emergency operational capability for it. That is, it could deploy a limited number of the missiles in an operational mode during a perceived crisis. … In July 2000, just prior to the missile's second flight test, the commander of Iran's Revolutionary Guard Corps stated that Iran had formed Shabab-3 units and built

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98 *Proliferation: Threat and Response*, p. 38.

99 W. Seth Carus, "Iran and Weapons of Mass Destruction," p. 2.

100 The IRGC (Islamic Revolutionary Guard Corps) air force is responsible for using Iran's long-range ballistic missiles. This includes the Scud, for which crude chemical warheads are believed to exist. A 1995 report names the Seventh Brigade of the IRGC airforce as a Scud missile unit. The IRGC airforce is also gearing up to create units to induct the longer-range Shabab-3 ballistic missile. See Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," pp. 86-91.

launching pads for the missiles. While this may overstate Iran's current capabilities, it clearly demonstrates Iran's intent. [101]

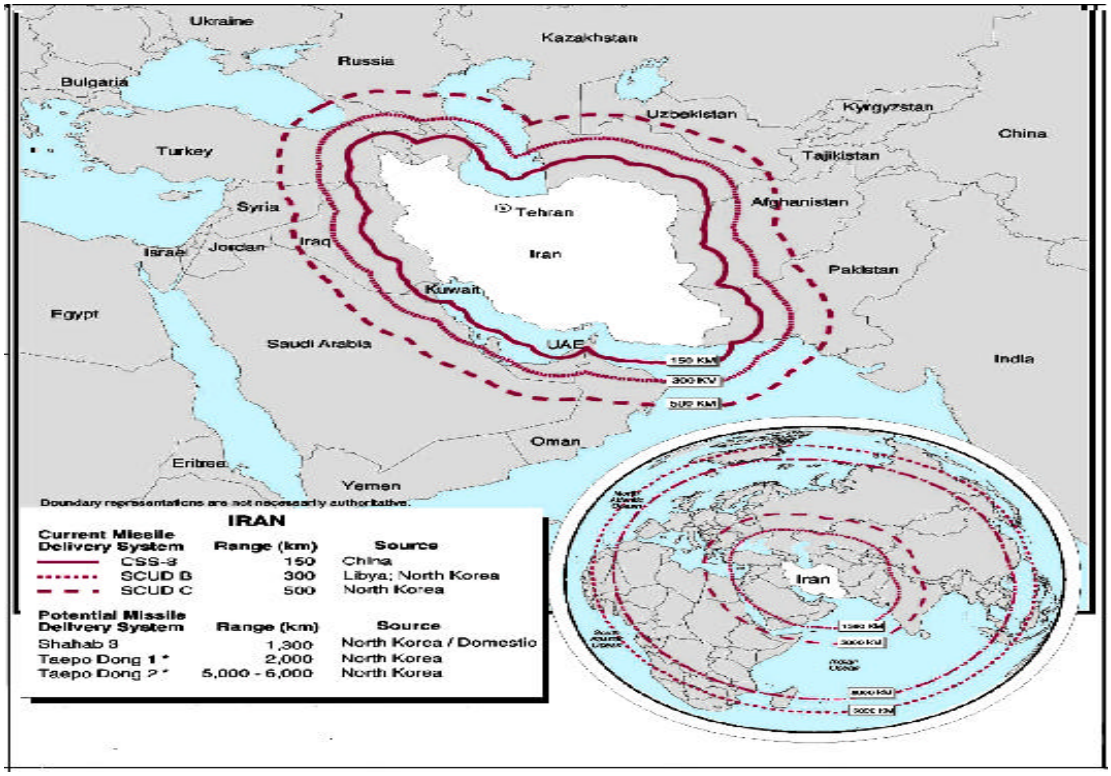

Figure 2: Estimated Ranges of Current and Potential Iranian Ballistic Missiles.[102]

Iran's development of the Shahab-3 is significant for two reasons. First, as can be seen in Figure 1, it gives Iran a delivery system able to strike every important U.S. ally—like Turkey, Israel and Saudi Arabia in the region. Second, it is clearly designed as a delivery system for weapons of mass destruction. With the Shabab-3 missiles, Iran would be one of the leading missile powers in the Middle East. This could significantly alter the military equation in the Middle East, given Tehran's ability to strike strategic targets in Israel, Saudi Arabia, and most parts of Turkey. [103]

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[101] *Proliferation: Threat and Response*, p. 38.

[102] Ibid, p. 37.

[103] "Iran Has Most Developed Missile Capability in M.E." *Middle East Newsline*, 28 August 2001.

SYSTEM	*Range*	*Number of Launchers*	*Number of Missiles*
CSS-8	150 km	25	150
Scud B/C	300/500 km	10	300
Shabab-3 (Tested, not fully deployed)	1,300 km	<5	N/a

Table 2: Iran's Major Missile Systems.[104]

Despite a slowdown in Russian aid, Iran also continues developing its long-range Shabab-4 missile. According to recent intelligence sources, China has been identified as the main partner in Tehran's 2,400 kilometers-ranged Shabab-4 project. In recent years China has provided Iran with technology for solid-fuel engines, specially treated missiles and simulation testing. Intelligence officials now believe that Shabab-4 missiles could be ready for testing as early as next year.[105] Tehran also has publicly mentioned the governments' plans for developing Shabab-5 with a range of 5,500 kilometers. This missile may either be designed as an IRBM or a space launch vehicle.[106] In addition, over the next 10 to 15 years, Tehran is likely to test an intercontinental ballistic missile that could strike the United States.[107] The increasing availability of technology, foreign assistance, cross-fertilization of proliferant programs suggests that Iran will be able to pursue more capable and more ambitious missile programs in the near future.

C. POTENTIAL FLASHPOINTS

Secular Turkey and Islamist Iran appear to be polar opposites. Each sees the other as an unwelcome source of inspiration to subversives within its own society. But current Turkish unhappiness with Iran goes well beyond philosophical disagreement.

Available online: www.menewsline.com

104 *The Military Balance 2000-2001*. (London: The International Institute For Strategic Studies, 2000).

105 "Iran Continues Shabab-4 Missile Project," *Middle East Newsline*, 6 September 2001. Available online: www.menewsline.com

106 *Proliferation: Threat and Response*, p. 38.

107 Ibid.

1. Islamic Fundamentalism

Turkish officials are convinced that an Iranian hand in Turkish politics is trying to interfere in Turkey's secular political system.[108] In recent years, Ankara is increasingly concerned about the growth of Iranian-led Islamic fundamentalism in the country. The government has frequently expressed its discontent with Iranian officials' active involvement in fueling the "Islamist fundamentalist movements," which are deemed as the greatest internal threat to Turkey's security.[109] Turkish security authorities have repeatedly stated the evidence of Iranian links with the Islamic fundamentalist groups and accused Iran of attempting to undermine the secular order of Turkey through furthering Islamist propaganda and even through training and support of Islamist terrorist organizations, such as the Hizbollah.[110] There has also been growing evidence of Iran's involvement in political violence and assassinations within Turkey.[111] Anti-Turkish remarks and anti Turkish-demonstrations organized by some Iranian officials reveal a persistent anti-Turkish attitude in the official Iranian circles. As a result, constant tensions and accusations arise between the two countries, including official protests and extradition of Iranian diplomats suspected of being involved in terrorist activities or fundamentalist movements in Turkey.[112]

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[108] *NATO Looks South*, p. 141.

[109] The Turkish Ministry of Defense White Paper of 2001 defines "Religious Fundementalism" among the internal threats directed against Turkey's security in the post-Cold War period together with "Proliferation of Weapons of Mass Destruction and Long Range Missiles" and "International Terrorism". For a detailed analysis of Turkey's national defense policy see, "White Paper." Available online: www.msb.gov.tr
The Turkish National Security Policy approved on the 31 October 1997 by the National Security Council (MGK), also defines "Islamic Fundamentalist Movement" as the immediate internal threat. Recent national security policy statement prepared by the Turkish Armed forces (TAF), repeats the 1997 assessment of Islamic fundamentalism and the Kurdistan Workers Party (PKK) as the greatest internal threat to Turkish security. See, Lale Sariibrahimoglu, "Turkey's Armed Forces Revise Threat Analysis," 22 August 2001. Available online: www.janes.com.

[110] Heinz, Kramer, *A Changing Turkey: The Challenge to Europe and the United States* (Washington: Brookings Institution Press, 2000), p. 142.

[111] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," in Barry Rubin and Kemal Kirisci, eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 107.

[112] In 1996, Turkey extradited eight Iranian diplomats, suspected of being involved in terrorist activities in Turkey, after testimony from a captured Turkish Islamist hitman. In February 1997, the Iranian ambassador was forced to leave the country after he had made a public speech during a religious event in a suburb of Ankara in which he openly praised anti-secular, fundamentalist movements and groups in Turkey. As a measure of retaliation, Tehran both times expelled an equal number of diplomats. The last time, it took one

2. Iranian Support for PKK Terrorism

Turkish officials are also convinced that Iran has emerged as the region's leading supporter of the PKK, while providing long-time support for fundamental Islamist movements within Turkey. Turkish officials believe that Iran provides the PKK with weapons, training, and funds, and that it hosts up to fifty PKK camps on the Turkey-Iran border where its fighters prepare for terrorist actions and receive medical treatment. Turkish Prime Minister Ecevit recently claimed that, "after Syria halted its support of the PKK to a certain extent, Iran took over Syria's role [as the PKK's leading state supporter]." [113]

Continued PKK attacks in areas adjacent to the border frequently produce tension between the two countries. Over the last few years, Turkey and Iran were close to military confrontation a few times, as the PKK and Turkish military operations near the Iranian border intensified. In 1994 and again in 1999, Turkish fighter planes, in their pursuit of the PKK, damaged Iranian border villages used as sanctuaries. It has even been rumored that the Turkish government, frustrated by Iran's support of anti-Turkish terrorism, considered a military attack on PKK bases in Iranian territory in May 1995.[114] In July 1996, the PKK attacked a Turkish military post on the Iranian border. Turkish President Suleyman Demirel visited the border and criticized Iran bitterly.[115] Just days after the bombing, yet another crisis erupted when Iran apprehended two Turkish soldiers who allegedly crossed into Iran during an operation against the PKK. Hence, the prospect of a potential armed conflict—once remote—has come to the fore as a result of the cross-border incidents and increased tension between Ankara and Tehran. Some analysts now argue that Iran has become a planning factor for the Turkish military.[116]

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year to normalize the relations via ambassadorial level representation. See, Heinz, Kramer, *A Changing Turkey*, pp. 141-145.

[113] Alan Makovsky, "Turkish-Iranian Tension: A New Regional Flashpoint? " *Policy Watch # 404*, (Washington D.C.: Washington Institute for Near East Policy, 9 August 1999).
Available online: http://www.washingtoninstitute.org/turkey/

[114] Kemal Kirisci, "Turkey and the Muslim Middle East," In Alan Makovsky and Sabri Sayari, eds. , *Turkey's New World: Changing Dynamics in Turkish Foreign Policy* (Washington D.C.: Washington Institute for Near East Policy, 2000), p. 95.

[115] Ibid.

[116] *NATO Looks South*, p. 30.

3. Rivalry for Influence in the Caucasus

Aside from Iranian support for terrorism, other bilateral disputes exist. Turkish-Iranian rivalry, geographically speaking, has widened considerably in recent years, now encompassing northern Iraq, the Caucasus, and Central Asia. There is a longer-term risk that the competition for influence between Turkey and Iran fueled by the dangers of Azeri separatism, "the Nagarno-Karabagh conflict,"[117] and the clash of rival Islamic and Turkish secularist ideologies could lead to a Turkish-Iranian armed conflict in the south Caucasus.[118]

Turkey and Iran once again came to the brink of confrontation over the Caspian, in August 2001. After an Iranian warship fired warning shots toward an Azeri oil research vessel in the disputed waters of the Caspian Sea and Iran's constant violations of Azeri airspace, the Turkish government in Ankara has launched a serious of military steps to stop Iran from pressing claims against Azerbaijan in the Caspian, including sending harsh warnings to Iran against fomenting tension in the oil-rich Caspian Sea. In response to the Turkish warnings, an Iranian Foreign Ministry official stated that, "We do not view Turkey as a frightening power … However, this adventurous gesture will be given a retaliation …. "[119] Iran could definitely be relying on its WMD and advanced missiles capabilities to pursue an aggressive stance toward its neighbors. The situation in

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[117] The potential for conflict between Ankara and Tehran is far more serious in the continuing Nagorno-Karabakh conflict and the emerging situation in Azerbaijan. Baku is regarded as a close ally of Turkey as well as a partner in the Baku-Ceyhan energy-pipeline. Azerbaijan has concluded military agreements to supply military hardware and training and is strengthening economic and cultural ties with Turkey. During the Nagorno-Karabakh conflict, Turkey, albeit not openly, also supported Azerbaijan. Iran fears of pan-Turkism and its effect on its own large Azeri minority and shows its discontent for close Turkish-Azeri relations. Because more Azeris live in northern Iran than in Azerbaijan proper, Tehran is concerned about Turkish intentions toward Azerbaijan and a potential irredentism that could lead to a larger secessionist movement in northern Iran.As a result, in return, Tehran both tried to establish itself as a promising partner under a more neutral Haydar Aliyev, unlike the 1992-1993 pro-Turkish Elchibey government, and to keep the Nagorno-Karabakh conflict alive by taking the Armenian side. Therefore, a long-term possibility that ethnic irredentism could spark military conflict between Iran and Azerbaijan carries the potential to precipitate Turkish military involvement or at least military assistance to Azerbaijan. For a detailed analysis see, Richard Sokolsky and Tanya Charlick-Paley, *NATO and Caspian Security: A Mission Too Far?* (Santa Monica, Calif.: RAND, 1999), pp. 40-48 and Graham E. Fuller and Ian O. Lesser, *Turkey's New Geopolitics: From the Balkans to Western China*, pp. 76-91

[118] *NATO and Caspian Security*, p. 44.

[119] "Turkey Confronts Iran over Caspian," *Middle East Newsline*, 3 August 2001. Available Online: www.menewsline.com

the Caspian is likely to constitute a further tension between Iran and Azerbaijan, which could involve Turkey, Armenia and Russia if an armed confrontation is likely to occur.

4. Turkey's Western Orientation and Its Alliances

Another potential source of conflict between Turkey and Iran results from Turkey's Western orientation and its alliances. Iran sees Turkey as pro-U.S., and since the 1996 Turkish-Israeli Military Agreement, pro-Israeli, and a regional rival of growing strength. Officials in Tehran see Turkey as an agent and potential launching pad for Iran's enemies, acting under orders from the United States. [120] The Iranians constantly criticizes the 1996 Turkish-Israeli military cooperation agreement that permits Israeli jets to exercise in Turkish airspace. Tehran is concerned that Turkey has brought the once-distant Israeli enemy to the edge of the Iranian border since Turkey and Israel are cooperating in intelligence gathering and electronic surveillance, primarily against Syria and Iran. [121]

D. THE LIKELIHOOD OF WMD USE AGANIST TURKEY

Turkish strategic planners are increasingly concerned about Iran's activities involving missile technology and weapons of mass destruction. The successful test of a medium-range Shabab-3 missile in February 2000 that could reach large parts of Turkey increased the country's vulnerability. It also reminded the Turkish defense planners of their country's insufficient anti-missile capabilities. The evolving Iranian potential complemented by a Shabab-4, gains its full threatening meaning for Turkey, particularly when Iranian efforts to develop a nuclear weapons capability is also considered.

Iran has several alternatives uses for Its NBC capabilities against Turkey. Iran could use the weapons to deter Turkey and its ally U.S. from getting involved in a conflict with Iran. To implement such a strategy, Iran could threaten to use its weapons against Turkish troops deployed to the border during a crises or against U.S. forces deployed in Turkey. Tehran could even threaten covert use of weapons against the targets in Turkey. If Turkey's conventional or U.S. extended deterrence commitments to Turkey fails, the weapons could be used to limit the scope of actions against Iran and the regime.

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[120] Efraim Inbar, "The Strategic Glue in the Israeli-Turkish Alignment," in Barry Rubin and Kemal Kirisci, eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 119.

Thus, Iran could threaten use of its arsenal if certain thresholds are crossed. At least in this way, Iran could ensure that the war remains limited.

In the case of a conflict with the United States, Iran's weapons also could be used to drive a wedge between the United States, Turkey and its NATO Allies. By suggesting that countries hosting the United States might come under attack from Iranian NBC weapons, Iran could ensure that Turkey do not support U.S. military actions and that Turkey do not allow the United States to operate from facilities in Turkey. Finally, the weapons could be used as a part of a war fighting strategy to compensate for Iranian conventional weapons deficiencies. Thus Iran could target Turkish military forces, key facilities supporting Turkish forces, or critical reinforcement nodes.

1. CBW Use in a Regional Conflict

Iran's wartime experience and current threat perceptions make nuclear, biological and chemical weapons essential to Iran's national security. After being repeatedly exposed to Iraqi chemical weapon attacks during the 1980-1988 Iran-Iraq war, Iranian leadership is already aware of the value of chemical weapons and its disproportionate psychological effects, especially when used effectively against poorly defended adversaries. [122]

Moreover, as Hashemi Rafsanjani's suggested in a speech in parliament in October 1988, the Iranians see the ability to retaliate with a sufficient nuclear, biological and chemical capability as the main requirement for deterring any type of future aggression against Iran:

> With regard to chemical, bacteriological and radiological weapons training it was made very clear during the war that these weapons are very decisive. It was also made very clear that the moral teachings of the world are not very effective when war reaches a serious stage; the world does not respect its own resolutions, and closes its eyes to the violations and all the aggressions which are committed on the battlefield …we should fully equip ourselves in the defensive and offensive use of chemical, bacteriological and radiological weapons. [123]

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[121] Ibid.

[122] Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," p. 84.

[123] Ibid.

Considering the current "reach" of Iran's long-range ballistic missiles, which can carry chemical and biological warheads, these weapons might easily be used against Turkey in a military confrontation. Turkey is increasingly frustrated by Iran's support of anti-Turkish terrorism. Thus, given Turkey's more assertive regional policies of recent years, Ankara is likely to press Tehran increasingly over time—with threats or even limited use of force—if the Iranians do not alter their behavior and rein in the PKK.[124] As was the case in 1995 and 1999, the Turkish government—determined to stop Iranian support for PKK terrorism—could again strike the PKK bases in Iran. Given Tehran's emphasis on its ability to retaliate with unconventional means, Iran could retaliate by striking strategic Turkish facilities and military targets as far as Ankara.

Furthermore, even though the evidence of Iranian CW use against Iraq during the 1980-1988 Iran-Iraq War suggests that Tehran would not be the first to use nuclear, biological and chemical weapons, if the conflict escalated to a certain point, the Iranian Revolutionary Guard Corps (IRGC)[125] could resort to CBW use against Turkey. With its emphasis on asymmetrical war-fighting strategies, the IRGC may choose an asymmetrical escalation option, either to preempt or to respond to a Turkish air strike of the PKK bases in Iran.[126] Currently, Tehran is more preoccupied on other fronts—Iraq, the Gulf, Azerbaijan, and Afghanistan—and is conventionally rather weak because of the effects of the crippling sanctions imposed during and after the 1980-1988 Iran-Iraq War. Moreover it has very little leverage over Turkey. Therefore, in the case of an armed conflict, Iran is in no position to openly confront Turkey conventionally.[127] However, in such a case, the Iranian military might employ chemical and possibly biological weapons

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[124] Alan Makovsky, "Turkish-Iranian Tension: A New Regional Flashpoint? " *Policywatch #404*.

[125] Iran's IRGC forces have the physical custody over chemical weapons and an assertive command and control system over biological weapons. IRGC also dominates Iran's naval forces and controls its long-range ballistic missiles. The organization strives for more autonomy over the use of such weapons and embraces a more offensive doctrine than the regular military. For a detailed analysis of the IRGC forces and Iranian command and control procedures, see Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," pp. 86-102.

[126] Iran's unconventional weapons use doctrine underscores Iran's interest in asymmetrical military responses, suggesting that Iranian defense planners plan to use nuclear, biological, and chemical weapons as a means to deter conventional attacks by a conventional superior adversary. The IRGC's maritime doctrine for CBW use suggests an asymmetrical escalation option, either to preempt or to respond to a superior conventional attack. For a detailed analysis of the "Iran's Unconventional Weapon Use Doctrine," see, Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," pp. 91-98.

on the battlefield to compensate for their conventional weaknesses. According to Giles, Iran's military has the capability to do that:

> Iran's military is capable of employing chemical weapons on the battlefield, at sea, and against strategic targets deep in the rear. It can do so using a variety of delivery systems, from mines, tube, and rocket artillery to rotary-and fixed-wing aircraft, naval vessels, and long-range ballistic missiles. Iran has adopted virtually every major type of weapon system to deliver chemical agents. The modification of delivery systems also may apply to biological and nuclear weaponization efforts. [128]

Moreover, the current training patterns provides clues about Iranian intentions to use nuclear, biological, and chemical weapons against a conventionally superior enemy. Since the 1980-1988 Iran-Iraq War, the Iranian military has made an extensive effort to improve its ability to operate in an NBC environment. The regular military and the IRGC routinely train in nuclear, biological, and chemical warfare. In fact, the increase in the number of Iranian exercises after Operation Desert Storm indicates that the Iranian armed forces are expecting to use nuclear, biological, and chemical weapons to offset the adversary's advantage in conventional weapons.[129] Therefore, under certain circumstances, Iran might consider using CBW against Turkish forces as a part of its counterforce doctrine of balancing a conventionally superior military. This may be simultaneously aimed at sending a signal not only to Turkey but also to its NATO Allies that any military adventurism against Iran may have unpredictable repercussions.

With the increasing possibility of a Turkish-Iranian armed conflict in the south Caucasus, an actual CBW use against Turkish forces deployed to Turkish-Iranian border should not be dismissed. The spillover effects of an Iranian-Azeri armed clash due to Iranian claims in the Caspian Sea or ethnic Azeri separatism in Iran carry the risk of precipitating a direct Turkish military intervention on behalf of Azerbaijan.[130] In such an event, although Iran most likely will be constrained from using CBW against Turkey, a

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[127] Alan Makovsky, "Turkish-Iranian Tension: A New Regional Flashpoint? " *Policywatch #404*, 1999.

[128] Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," p. 87.

[129] Between 1992 and 1997, Iran's military has conducted 21 chemical operations in military exercises. See *Table 1*: Chemical Operations in Iranian Military Exercises, 1992-97 in Gregory F. Giles," The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," pp. 94-95.

[130] Richard Sokolsky and Tanya Charlick-Paley, *NATO and Caspian Security*, p. 13.

potential for CBW use against Turkish forces either by a false warning or by unauthorized use still exists.

Azerbaijan has strong cultural and ethnic ties with Turkey and is regarded as the closest ally of Turkey. Therefore, there is a high risk that an intervention on behalf of Baku could spill over into conflict involving Turkey and Iran. In fact, past evidence during the Nagorno-Karabakh conflict in 1992-93, suggest that Turkey's neighbors—particularly Russia and Iran—are taking the possibility of a Turkish intervention seriously by taking countermeasures:

> Russia began to amass forces and leverage to become the sole and decisive arbiter of the Nagorno-Karabakh war and to defeat Turkey's grand design…. Moscow aided insurgents against an anti-Moscow Azeri government, supported the Armenian forces fighting Azerbaijan, and deterred, by nuclear threats, any Turkish plans to act on behalf of Baku.[131]

If the increasing Azeri separatism assumes a threatening character for Iranian territorial integrity, Iran might blame both Baku and Ankara for the Azeri activities in Iran. During the escalation period, owing to its determined pursuit of organizational autonomy and its disregard for wider national policy, the IRGC could use chemical or biological weapons—although it may be unauthorized by the Iranian leadership—against Turkish forces dispatched to the border.[132] Iraq's surprise invasion in 1980 might have encouraged Tehran to delegate more authority over control and use of nuclear, biological, and chemical weapons to IRGC forces and under certain circumstances to the regular military. Thus, the IRGC forces, acting under more authoritative and delegative command and control procedures, might employ CBW either as a result of a false warning or fear of a Turkish preemptive airstrike. Therefore, in a potential future conflict involving Iran, Turkish strategic planners must strongly consider the risk of an inadvertent escalation.

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131 David S. Yost, *NATO Transformed: The Alliance's New Roles in International Security* (Washington D.C.: United Institute of Peace Press, 1998), p. 86.

132 According to Gregory F. Giles, Iranian leaders largely see nuclear, biological, and chemical weapons as a deterrent and prefer defensive doctrines. In contrast to the civilian leadership, which tends to use unconventional weapons for defensive purposes, the IRGC doctrine does not call for a response in kind but rather prefers pursuing asymmetrical war-fighting strategies. See Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," in *Planning the Unthinkable*, pp. 91-98

2. Unconventional Weapons Use in Retaliation

Under the 1996 Military cooperation agreement, Israel has access to the vast Turkish airspace to train its pilots for long-range missions, which could be employed against regional weapons-of-mass-destruction sites and would enhance its ability to collect intelligence against arch-foes Iran, Iraq and Syria.[133] Although Turkish-Israeli military cooperation is a powerful deterrent to any aggressive action against Turkey, Ankara is taking most of the risks. It is far from clear, indeed probably unlikely for now, that Turkey would allow Israel to stage attacks from its territory, that Israel and Turkey would plan a joint operation, or that Israel or Turkey, lacking a direct interest, would join a war involving the other. Nevertheless, neighboring Iran (also Syria and Iraq) might be considering and planning for these possibilities or planning for less overt forms of Israeli-Turkish cooperation during hostilities.[134]

In this regard, concerns about a possible Osirak-type strike by Israel or other potential adversaries are also a factor in Iranian defense planning.[135] Israel's military co-operation agreement with Turkey has heightened Iranian fears that Israel will launch an attack against Iran's nuclear facilities.[136] For example, during a visit to Turkey in January 2000 Iranian Foreign Minister Kamal Kharazzi reportedly raised Iranian concerns about the potential for attacks by Israeli military aircraft that train in Turkey and fly close to Iran's borders.[137] During the Iraqi crises of February 1998, the Turkish ambassador to the United States stated that Turkey would consider allowing Israel to use Turkish airspace for retaliation should Iraq launch missile attacks on Israel.[138] As Efraim Inbar, director of the Begin-Sadat Center for Strategic Studies, has recently observed, Turkish airspace could be used for retaliation against Iran and Iraq by Israeli Air Force:

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[133] Alan Makovsky, "Turkish-Israeli Relations in the Context of Israeli-Arab Tensions," *Policy Watch No.502* (Washington D.C.: Washington Institute Near East Policy, 10 November 2000). Available online: http://www.washingtoninstitute.org/turkey/.

[134] Ibid.

[135] Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," p. 85.

[136] Hossein Aryan, "Missile development and Iranian Security," *Jane's Intelligence Review*, 1 September 2001. Available online: www.janesonline.com

[137] "Jane's Sentinel Security Assessment-The Gulf States-10," *Jane's Online*, 29 October 2001. Available online: www.janesonline.com

[138] Ed Blanche, " Israel and Turkey Look to Extend Their Influence into Central Asia," *Jane's Intelligence*

> Israeli combat aircraft flying in Turkish airspace near the Iraqi and Iranian borders enhance Israeli deterrence against missile attacks from these countries. The chances of the Israeli Air Force dealing effectively with such weapons are better when the distances involved in airstrikes are smaller.[139]

By openly stating that it has the ability to retaliate with unconventional means, Tehran constantly sends warning signals to Israel and its allies. As the Iranian nuclear weapons program nears completion, Israel might consider a conventional military strike on the Busher nuclear facility as it did against the Iraqi Osirak nuclear reactor in 1981. Although unlikely, due to its geographical proximity to Tehran, Israeli preventive strikes on Iran's unconventional weapons infrastructure might be conducted from Turkish airbases. [140] However, this might trigger an Iranian retaliatory response possibly with modified Scud missiles and long-range Shabab-3 missile equipped with nonconventional warheads. Even, in the absence of Turkish involvement, Iran may decide to punish Turkey for cooperating with Israel by maintaining Israeli intelligence installations along the Turkish-Iranian border or by allowing Israeli spy planes to gather-intelligence about Iranian nuclear facilities from Turkish airspace. In such a case, the most likely targets would be the reported Israeli intelligence installations on Turkish soil and the Turkish strategic installations in the area. Similarly, any wounded Israeli aircraft landings on Turkish territory could be another catalyze for Iranian retaliatory strikes. The following assessment by Michael Eisenstadt supports the likelihood of such a scenario:

Review, 1 August 2001. Available online: www.janesonline.com.

[139] Ibid.

[140] The air force training exchange agreement signed between Turkey and Israel in 1996 calls for Israeli aircraft to train in Turkey four times a year. These flight trainings enable the Israelis to gain experience flying long-range missions over mountainous areas -a skill that would be necessary for missions over Iran, and provide greater opportunities for overland training than are available in a small country like Israel. Such exercises also enable both air forces to become familiar with procedures and tactics used by their counterparts. This familiarity could potentially facilitate cooperation in wartime. In the air, Turkey could allow damaged Israeli aircraft to land at Turkish air bases and permit Israeli combat search and rescue crews trained to rescue the downed pilots to operate from its soil. This would allow the Israeli air force to be more aggressive and take greater risks. It could also allow Israel to use Turkish air bases to launch manned and unmanned reconnaissance flights over Syria and Iran. It could likewise allow Israeli attack helicopters, aircraft, and commandos operating from Turkish staging areas hunting missile launchers in Syria, Iran and Iraq. It could also allow Israel to use the series of air bases in its border with Syria and Iran for combat missions, raising the possibility of attacks against both. For a detailed analysis of the military aspects of the Turkish-Israeli Military cooperation, see Michael Eisenstadt, "Turkish-Israeli Military Cooperation: An Assessment, " *PolicyWatch* # 262 (Washington D.C.: Washington Institute Near East Policy, 24 July 1997). Available online: http://www.washingtoninstitute.org/turkey/.

> For Iran, Israeli-Turkish military cooperation has brought Israel to its border. Israel has reportedly established intelligence listening posts there, and Turkish cooperation would greatly facilitate Israeli air strikes on Iran's nonconventional weapons infrastructure, much of which is located near Tehran. Israeli aircraft could stage from and/or refuel over Turkey, greatly increasing their striking range.[141]

Turkey's assistance to Israel under the "Turkish-Israeli Military Cooperation Agreement" accords could legitimately justify and thus trigger an Iranian WMD use against Turkey.

3. Terrorist Use of CBW

The Islamic Republic of Iran may also use chemical and biological weapons in acts of terrorism against Turkey. By allegedly supporting-harboring, financing and training-Islamic militant groups in Iran and by successfully masking all these activities, Iran has been able to pursue undeclared war against Turkey without any military reprisals. Iran is also behind the hundreds of suicide bombings against Turkish government and security officials and unresolved killings by Hisbollah militants for decades.[142] Thus, Tehran may even consider chemical weapons as useful terrorist weapons. In response to potential Turkish strikes against PKK camps in Iran, Tehran may deliver biological and chemical weapons to the PKK or to extremist Islamic groups without having to face the repercussions. Terrorist groups such as the PKK or the Hisbollah could employ these weapons in densely populated Turkish cities like Istanbul and Ankara, resulting in mass killings. According to Giles, reports verify Iran's intention to use CBW in terrorist attacks:

> Press reports claim that Iran has developed a biological weapons aerosol for terrorist use and that Iran leaders used a poison to assassinate three opponents of the regime in 1996.[143]

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[141] Michael Eisenstadt, "Turkish-Israeli Military Cooperation: An Assessment," *PolicyWatch #262*, (Washington D.C.: Washington Institute for Near East Policy, 24 July 1997).
Available online: http://www.washingtoninstitute.org/turkey/.

[142] Alan Makovsky, "Turkish-Iranian Tension: A New Regional Flashpoint? " PolicyWatch #404, (Washington D.C.: Washington Institute for Near East Policy, 9 August 1999). Also see Ersel Aydinli "Implications of Turkey's Anti-Hizbullah Operation," PolicyWatch #439 (Washington D.C.: Washington Institute Near East Policy, 9 February 2000). Available online: http://www.washingtoninstitute.org/turkey/.

[143] Gregory F. Giles, "The Islamic Republic of Iran and Nuclear, Biological, and Chemical Weapons," p. 89.

In the wake of the September 11 terrorist attacks on U.S. territory, the risk of biological weapons use by the Islamic militants has increased. To show its determination to fight terrorism with every means possible, Ankara has allowed U.S. and British planes to use Turkish air space and the government has approved the deployment of troops abroad, particularly to Afghanistan. However, Turkey now fears an anthrax attack from Islamic insurgents connected to Saudi billionaire fugitive, Osama Bin Laden, and from the Islamic groups in Iran.[144]

E. IMPLICATIONS FOR TURKISH POLICY AND FREEDOM OF ACTION

Iran's acquisition of weapons of mass destruction and advanced delivery capabilities could have dramatic implications for Turkish policy and security. First of all, realizing Turkey's vulnerability to missile attacks, Iran would possibly use these weapons as a source of intimidation or blackmail. These weapons could be used to coerce Turkey and to deter its NATO allies from responding to aggression against one of its allies, which may invoke an Article V responsibility. By giving Tehran the ability to put Ankara and in the near future Bonn, London or Paris at risk, these weapons could impede an effective NATO response to Iranian aggression against Turkey. At least, Iran's possession of nuclear weapons would certainly complicate coalition building within the NATO Alliance.

In the event of a potential confrontation with the United States, Iran could use its WMD arsenal to prevent Turkey from supporting its closest ally, as Ankara did during the 1990-1991 Gulf War. By openly threatening or blackmailing Ankara, Iran might want to ensure that Turkey can not support U.S. military actions, and that will not allow the United States to conduct preemptive strikes against Iran from Turkish facilities.

In the event of a nuclear Iran, Turkey's strategic dilemma would be even more pronounced. Most of all, in future crises, a nuclear-powered Iran will be able to influence Ankara by limiting its freedom of action and by constraining Turkey from taking actions against Iranian interests, especially in the Caucasus. Turkey may not be able to take decisive actions such as striking terrorist bases in Iran or such as openly warning Iran for

144 "Turkey Fears Anthrax Attack," *Middle East Newsline*, Vol. 3, No. 401, 22 October 2001. Available online: www.menewsline.com

its aggression against Azerbaijan. Ankara may not be able to wield its military and economic assets to end Tehran's allegedly growing support of anti-Turkish organizations, as it did in the past. At least, Ankara faces a monumental task, for if Iran is armed with WMD, Turkey's economic and military leverage over Tehran will diminish perilously. The prospects for a direct intervention to an Azeri-Iranian armed conflict would also be very limited. Similarly Iran would easily be able intimidate or practice political blackmail against Turkey in periods of crises.

Iran could even use these weapons to import its Islamic revolution. The following statement of Duygu Bazoglu Sezer, a prominent Turkish scholar, perhaps best reflects the existing Turkish concerns about Iranian WMD capabilities:

> A nuclear-armed Iran would be in a position to claim leadership of the Islamic world, and to exercise increased influence on Turkish domestic politics to the detriment of Turkey's Western-type secular democratic regime and western-oriented foreign policy. [145]

It would be fair to conclude that Iran's aggressive stance and anti-Turkish attitudes toward Turkey might be originating from Tehran's reliance on nuclear, biological and chemical weapons. Hence, Turkish policy makers and defense planners cannot and should not ignore these developments in a neighboring country.

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[145] Duygu Bazoglu Sezer, "Turkey's New Security Environment, Nuclear Weapons and Proliferation," *Comparative Strategy*, vol. 14, no. 2, Spring-Summer 1995, pp. 165.

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IV. SYRIAN WMD THREATS TO TURKEY

A. INTRODUCTION

Turkey's long southern border with Syria is an area of tension. In recent years, the risk of conflict with Syria has increased. This has increased Turkey's attention to Syria as a security challenge.[146] Numerous issues have strained Turkey's relations with Syria. For example, continued Syrian territorial claims to Turkey's Hatay province,[147] disputes over sharing the waters of the Tigris and the Euphrates, Syrian criticisms of Ankara's military cooperation with Israel, weapons of mass destruction and above all, Damascus's support and sheltering of the PKK and its leaders. Of these concerns, the last has been proximate and consistently more dangerous. Ankara has periodically threatened to strike PKK camps in Syrian-controlled parts of the Bekaa Valley. And finally, in October 1998, the crisis over Syria's alleged support for the PKK brought the two countries to the verge of war when Turkey threatened Syria with armed action. Growing tension between the two countries has heightened the existing fears that a military conflict could erupt in the region. Potential hot pursuit incidents across the border or an even more serious confrontation between forces still seem a very real possibility at times.[148]

Syria's ballistic missile capabilities and its possession of weapons of mass destruction have also been a major worry for Turkey. Syria is continuing its policy of building CW and ballistic missiles to provide a strategic deterrent capability against potential regional adversaries.[149] Since the Gulf War, concern about Syria has grown in Turkish security circles and now the concern is even more prominent as Syria expands its

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[146] Ian O. Lesser, *NATO Looks South*, p. 36.

[147] Hatay was a province of the Ottoman Empire from 1516 until the end of World War I and was called the Sanjak of Alexandretta when it was occupied by France. France kept control of Hatay when it granted Syria independence in 1936. A census conducted by the French authorities in 1938 on a system devised by the Turkish government declared that Turks constituted 46% of the population and were thus the dominant ethnic group in the Sanjak. In 1939, Hatay's population strongly endorsed the transfer to Turkey in a referendum in which they voted overwhelmingly in favor of becoming part of Turkey. As a result, Hatay joined Turkey through a process of self-determination. See, Jane's online/ Turkey/External Affairs,/Syria. Available online: www.janesonline.com.

[148] Kemal Kirisci, "Turkey and the Muslim Middle East," in Alan Makovsky and Sabri Sayari, eds., *Turkey's New World: Changing Dynamics in Turkish Foreign Policy* (Washington D.C.: Washington Institute for Near East Policy, 2000), p. 212.

[149] Andrew Koch, "Israel Say Syria Continues with WMD," *Jane's Defense Weekly*, 11 October 2000.

ballistic missile and chemical weapons capabilities while attempting to develop offensive biological weapons. Recent intelligence reports reveal that Damascus hopes to use chemical and biological warfare agents on its Scud C and D missiles. These missiles can strike large areas of Turkey. This increased Turkey's exposure to any aggressive behavior from Syria. Since 1998, the potential for conflict with Syria has been reduced but not eliminated by the expulsion of Abdullah Ocalan from Damascus. This suggests that Turkey might be one of the victims of Syrian WMD use. Unable to achieve conventional military parity with Turkey, Syria's weapons of mass destruction could help the Assad regime counter a potential Turkish attack on Syrian territory while continuing its proxy war against Turkey.

As can be seen in the above section, Syrian CBW and missile capabilities and the likelihood of these weapons being used against Turkey are a grave threat to Turkey. Therefore, a closer analysis of Syria's capabilities should be discussed in detail.

B. CAPABILITIES

Syrian chemical weapons development has been largely spurred by its disastrous conventional military defeats by Israel. After Syria's air force was routed by Israeli jet fighters in Lebanon in 1982, Syria sought to bolster the country's strategic capabilities by pursuing by developing chemical weapons and ballistic missile delivery systems.[150] Syria has developed the weapons as a counterweight to Israel's superior conventional military and nuclear arsenal. Naturally, these weapons also intimidate potential regional adversaries such as Turkey. Syria apparently decided that surface-to-surface missiles could counter Israel's and Turkey's (since the early 1990's) air superiority.[151] From a strategic perspective, long-range missiles, such as the Scuds, offer a means to deliver chemical weapons in response to Israeli nuclear threats and to Turkey's recent threats to use force.[152]

Available online: www.janes.com

[150] Eric Croddy, "Syria's Scuds and Chemical Weapons," *Center for Nonproliferation Studies*, Monterey Institute for International Studies, March 1999.
Available online: http://cns.miis.edu/research/wmdme/syrscud.htm.

[151] Ibid.

[152] Anthony H. Cordesman, *Military Balance in the Middle East XIV: Weapons of Mass Destruction*, CSIS, March 1999, p. 24.

Therefore, Syria will likely continue to develop an extensive chemical and biological weapons arsenal and will also invest in upgrading the accuracy of its missile systems and conventional warheads to supplement its CBW programs.

1. Nuclear Weapons Program

Intelligence reports claim that Syria currently is not pursuing the development of nuclear weapons. Although Syria has an ongoing nuclear research effort and has a small Chinese-supplied research reactor, no evidence of major progress in the development effort exists.[153]

2. Chemical Weapons Program

Of the Arab nations, Syria has the largest and most advanced CW capability in the Middle East.[154] Syrian efforts to acquire chemical weapons begun as early as 1972. By 1986, Syria reportedly possessed a large arsenal of both blister and nerve agents. By the 1990s, the Syrian chemical weapons arsenal included hundreds of tons of chemical agents. Weaponized agents include blister (mustard) and nerve (sarin, VX), and can be delivered in aerial munitions, artillery and rocket shells.[155]

Analysts believe that by the late 1980s, Syria had armed many of its modern missiles, including Scuds, with chemical warheads. While Syria's existing CW capability is principally based on Sarin nerve gas, the officials believe that Syria is investigating VX nerve gas in an effort to obtain an effective CW capability.[156] Today, Syria maintains a wide rage of delivery systems including shells, bombs, and nerve gas warheads for multiple rocket launchers. Damascus is also believed to have binary weapons and cluster bomb technology suitable for delivering chemical weapons. Syria's CW capabilities include warheads filled with sarin for the Scud-B and Scud-C missiles, and bombs filled with much more persistent VX that can be delivered by Su-24, MiG-23 or Su-20/22 aircraft.[157] Syria began producing its Sarin-based CW warhead in the mid-1980s and

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153 *Proliferation: Threat and Response*, p. 43.

154 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

155 Ibid.

156 Andrew Koch, "Israel Say Syria Continues With WMD," .

157 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook -Chapter IX*, 15 April 2000.
Available online: http://online.janes.com/janesdata/guides/jcdg/jcdg0009.htm

developed other delivery means, including gravity bombs for its strike aircrafts and possibly artillery rounds for its ground forces.[158] Syria is believed to have flight-tested a Scud-B short-range ballistic missile carrying a warhead designed to disperse VX in 1998. Defense analysts are now worried that VX can be deployed in the Soviet-supplied SS-21 surface-to-surface missile and the North Korean-developed Scud-C missiles.[159]

Syria is also capable of producing precursor chemicals used for producing mustard, and probably sarin as well. So far, three Syrian production sites have been identified as producing CW agents. According to a recent report by Center for Strategic and International Studies (CSIS), one of the CW production facilities is located in a suburb north of Damascus. A second is near the industrial city of Homs and is the likely source of petrochemical derivatives for ethylene, a mustard precursor, and alcohols, which are used to produce nerve agents. A third facility in Hama is said to be producing VX, a heavy gas regarded as being immune to wind shifts. According to the same report, hundreds of agent tons—including nerve and mustard agents—are produced by these facilities.[160]

Syria has recently purchased earth-boring equipment to build deep bunkers for CW and to shelter their military and political leaders against a potential Israeli or Turkish strike.[161] There are also unconfirmed reports of sheltered Scud missiles with unitary Sarin or Tabun nerve gas warheads—now being replaced by cluster warheads with VX bomblets—deployed in caves and shelters near Damascus.[162]

According to Israeli defense sources, currently Syria is able to produce advanced warheads indigenously. Damascus has launched an effort to use the chemical and biological warfare agents for deployment on Syria's Scud C and D missiles, which have a range of nearly 600 and 700 kilometers, respectively, and can strike anywhere in Israel

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158 Andrew Koch, "Israel Say Syria Continues With WMD,"

159 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook-Chapter IX*, 15 April 2000.

160 "Western Firms Helping Syria's WMD Programs," *Middle East Newsline*, 8 October 2001. Available online: www.menewsline.com

161 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook-Chapter IX*, 15 April 2000.

162 Anthony H. Cordesman, *Military Balance in the Middle East XIV*, p. 24.

and in large areas of Turkey.[163] Although US officials said the weaponisation efforts are being conducted indigenously, a recent Central Intelligence Agency report stated that Syria's CW efforts "remain heavily dependent on foreign suppliers for precursor chemicals and other key CW-related equipment. [164]

In the future, Syria should be expected to continue to improve its chemical agent production and storage infrastructure. However, to maintain key elements of its chemical warfare program, including precursor chemicals and key production equipment, Syria needs to acquire related materials from foreign sources.[165]

3. Biological Weapons Program

Syria is also believed to be pursuing biological agent development and possess sufficient biotechnical infrastructure to sustain an offensive biological weapons program.[166] Several unconfirmed reports indicate that Damascus appears to be close to successfully engineering some viral agents. These reports indicate that, "it is highly probable that Syria is developing an offensive biological capability."[167] There are reports of at least one underground biological production plant based in Cerin. This plant probably has a production capability for anthrax and botulinum and possibly other agents.[168] Intelligence sources claim that Syria weaponized the Botulin and Ricin toxin and possibility a small amount of anthrax in the early 1990s. Syria may also be developing or testing biological variations on ZAB-incendiary bombs and PTAB-500 cluster bombs and Scud warheads. [169]

Experts believe the design of biological bombs and missile warheads with the lethality of small nuclear weapons may now be within Syrian capabilities. These capabilities also include the design of UAV, helicopter, cruise missile, or aircraft-borne systems to deliver the agent slowly over a long broad area.[170]

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163 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook -Chapter IX*.

164 "Western Firms Helping Syria's WMD Programs," *Middle East Newsline*, 8 October 2001.

165 *Proliferation: Threat and Response*, p. 45.

166 Ibid.

167 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

168 "Western Firms Helping Syria's WMD Programs,"

169 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

170 Ibid.

Syria also has attempts to obtain BW agents from foreign sources and is contracting assistance from China and from Western companies.[171] The evidence of foreign help is also revealed in a recent CSIS report stating that, " Syria's principle suppliers of CBW production technology includes large chemical brokerage houses in Holland, Switzerland, France, Austria, and Germany, including many of the same companies that were supplying Iraq."[172] However, without significant foreign assistance, that Syria could manufacture significant amounts of biological weapons for several decades is unlikely.

4. Ballistic Missile Program

After Iran, Syria has one of the largest missile capabilities in the Middle East with a limited number of Scud warheads.[173] Today, Syria possesses missile technologies capable of striking the population centers and industrial targets of Israel and its regional adversaries, offering a strategic deterrent against any kind of military action against itself. Currently, the bedrock of Syrian strategic capabilities is based on the Scud-B and Scud-C missiles, which allow Syria to attack neighboring countries' population centers and strategic assets.[174] Due to Syria's reliance on the Scud, Damascus has taken precautions to protect these missile systems by burying them in concrete, deep beneath hillsides, so that they are invulnerable to air raids.[175]

According to U.S. (DoD) officials, to carry the CW warheads, Syria has also fielded "a couple of SSM brigades of Scud-Bs and Scud-Cs, comprising several hundred missiles." [176] Each of these brigades is believed to be equipped with 12 mobile launchers and slightly more than 100 missiles.

Syria also acquired new long-range North Korean Scud Cs and these weapons are reportedly deployed in the northern part of the country. The Scud Cs have ranges of up to 550-600 kilometers. Reports claim that Scud-C nerve gas warheads using VX cluster

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171 "Western Firms Helping Syria's WMD Programs,"

172 Ibid.

173 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

174 *Proliferation: Threat and Response*, p. 45

175 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook -Chapter IX.*

176 Andrew Koch, "Israel Say Syria Continues With WMD,"

bomblets seem to have been in production since early 1997. Meanwhile, cooperation with North Koreans, which began in the early 1990s, has given Syria the capability to indigenously produce complete Scuds as well as to upgrade their ranges from the 300km Scud-B to the 500km Scud-C. More recently, Syria is reportedly trading a reduction in 958 kg payload to approximately 350-450kg, as well as degraded accuracy, for the increased range—which gives them the ability to strike strategic targets deep in the adversaries' territories.[177]

Syria flight-tested its Scud-D version late in September 2000, a range of about 600km.[178] Analysts believe that due to the missile's light payload and poor accuracy, it is likely to have only a unitary warhead, which most probably would carry the more lethal VX agent to put opponents' population centers at risk. Once complete, the greater range would allow Damascus to fire the Scud-D from further within its own territory, thereby making the task of locating the launchers and conducting a pre-emptive strike against them more difficult. Moreover, it would allow Syria to bring Turkey's capital Ankara within range, thereby putting its second strategic threat (Turkey) under increased exposure. [179]

In addition to the Scud missiles, Syria possesses FROG-7, and the SS-21 SRBMs acquired from the Soviet Union during the Cold War. Moreover, there are reports of Chinese deliveries of M-11, M-9 missiles.[180] Syria also obtained chemical warheads, filled with VX nerve gas for its Scud-B and FROG-7 missiles from the former Soviet Union.[181]

There were reports in May 2001 that Syria was also looking to procure the Iskander-E (SS-X-26) tactical ballistic missile system from Russia.[182] The missile has a range of 280km and has a quicker reaction time and better defensive maneuvering than its

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177 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

178 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook-Chapter IX.*

179 Andrew Koch, "Israel Say Syria Continues With WMD,"

180 Ibid.

181 "World Review of CBW Offensive Threat Capability,"

182 Andrew Koch, "Israel Say Syria Continues With WMD,"

Scud predecessors. The missile is believed to have multiple-warheads and the system would certainly increase Syria's missile capabilities.

Damascus continues to acquire Scud-related equipment and materials from Iran and North Korea, including considerable North Korean help in producing Scud Cs. A missile test site exists 15 km south of Homs where Syria has tested missile modifications and new chemical warheads. According to some reports, during 1999 Syria built two missile plants near Hama, one for solid fueled rockets and the other for liquid fueled systems. [183] Nevertheless, Syria can now build both the entire Scud B and Scud C and experts believe Syria has sheltered and/or underground missile production or assembly facilities at Aleppo, Hama and near Damascus.[184] The most likely role for the Scud C is to deliver a chemical warhead to create mass casualties and havoc. Syrian Scud-C deployments Hama include a relatively high ratio of launchers to missiles in order to deliver an overwhelming first strike, and this enables Syria to launch most of its ballistic missiles in a few salvos. [185]

Some experts believe that Syria began storing some surface-to-surface missiles armed with chemical weapons in concrete shelters in the mountains near Damascus and in the Palmyra region no later than 1986, and plans to deploy them forward in an emergency situation have existed since that date.[186] As can be seen in Figure 3, Syria's Scuds allow it to threaten all of Israel and most portions of Turkey.

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183 Eric Croddy, "Syria's Scuds and Chemical Weapons,"

184 "Western Firms Helping Syria's WMD Programs,"

185 Ibid.

186 Anthony H. Cordesman, *Military Balance in the Middle East XIV: Weapons of Mass Destruction*, CSIS.

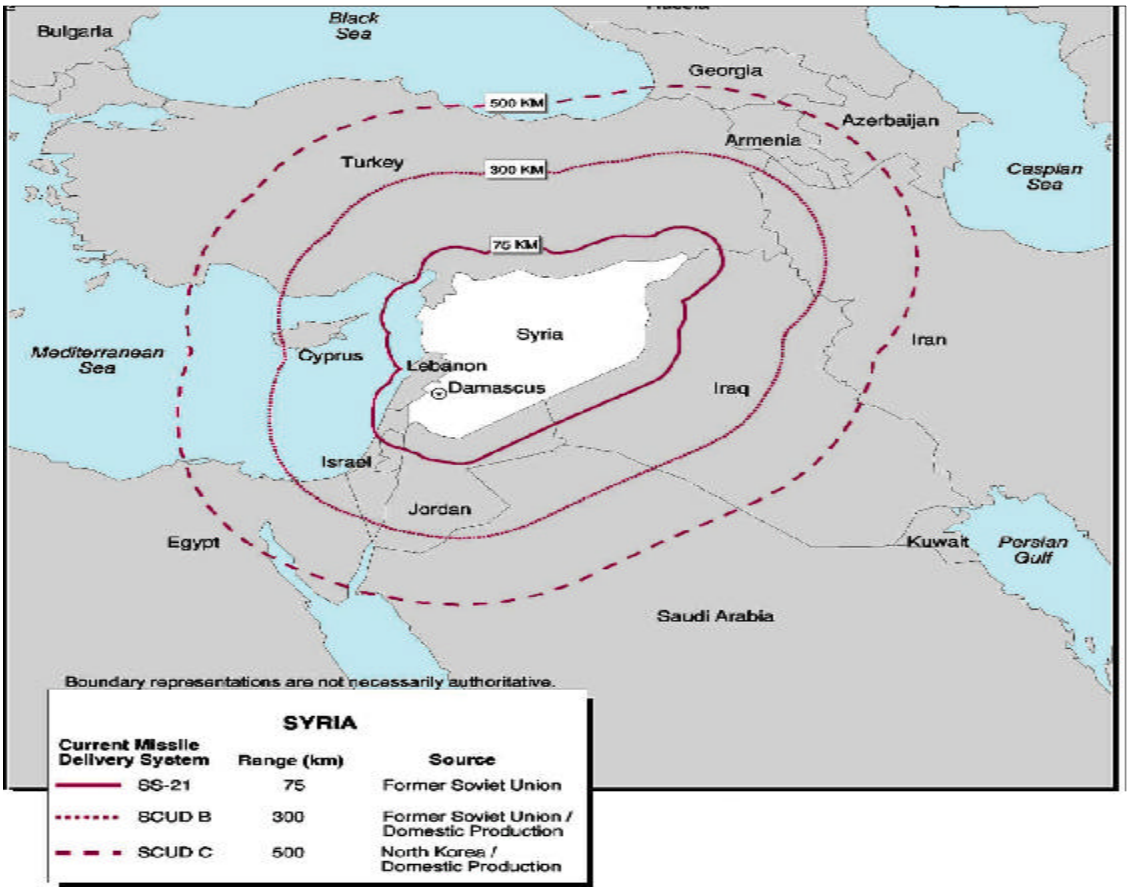

Figure 3: Estimated Ranges of Current and Potential Syrian Ballistic Missiles.[187]

Ultimately, intelligence officials believe that Syria could be seeking a medium-range ballistic missile, possibly based on North Korea's No-Dong, to meet Damascus' deterrent requirements against Israel, Turkey and Iraq.[188] Syria could also eventually seek a future option to develop a modern solid fueled SRBM due to their greater military utility and ease of handling.

C. POTENTIAL FLASHPOINTS

Given the missile capabilities and CBW arsenals of Syria, a serious Turkish-Syrian clash could have unprecedented consequences for Turkey. An open conflict or even a protracted period of brinkmanship could result in Syria's employing NBC-tipped Scud B and Cs against Turkish targets, possibly including Ankara. NBC-tipped Scuds

187 *Proliferation: Threat and Response*, p. 41.

188 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook -Chapter IX.*

could also be employed against Turkish troops at the initial stages of a potential PKK-related Turkish offensive into Syrian territory or during the Syrian troop advancements prior to occupation of the historically claimed Hatay province.[189] In the case of a large-scale intervention, the prospects for escalation would increase, as would the incentives for Damascus to explore asymmetric strategies—including using chemical and biological weapons against Turkish targets. This prospect, once remote, has come to the fore as Syria has sought a significant CBW capability as well as increased accuracy and range for its ballistic missiles, which are now capable of striking most parts of Turkey including Ankara. Therefore, assessing the circumstances under which CBW might be employed against Turkey is necessary.

1. Support for PKK Terrorism

Turkey's relations with Syria have been adversely affected by Syrian support for the PKK. Syria has periodically used its support for the PKK to pressure Turkey. PKK leader Abdullah Ocalan had been based in Damascus, and Syria has facilitated PKK operations in Turkey both financially and logistically.[190]

Ankara periodically has warned Syria to stop supporting PKK and threatened to strike PKK camps in Syrian-controlled parts of the Bekaa Valley in Lebanon from which they have conducted anti-Turkish cross-border operations.[191] There have also been constant hot-pursuit incidents between Syrian and Turkish forces pursuing PKK guerillas on the border.[192]

Ankara's patience with Damascus broke in September 1998, when the Turkish government reportedly deployed 10,000 reinforcements to the Syrian border and threatened military action to force an end to Syrian support for the PKK. The Turkish

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[189] For a detailed analysis of how might Syria use its chemical weapons see, "The Likelihood of Chemical Weapons Use Against Israel," section in "World Review of CBW Offensive Threat Capability," Jane's Chemical-Biological Defense Guidebook-Chapter IX, 15 April 2000. Available online: http://online.janes.com/janesdata/guides/jcdg/jcdg0009.htm. For a detailed analysis of "Tactical and Strategic Potential of Syrian Chemical Weapons," see Eric Croddy, "Syria's Scuds and Chemical Weapons," *Center for Nonproliferation Studies*, Monterey Institute for International Studies, March 1999. Available online: http://cns.miis.edu/research/wmdme/syrscud.htm

[190] Ian O. Lesser, *NATO Looks South*, p. 36.

[191] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," in Barry Rubin and Kemal Kirisci, eds., Turkey *in World Politics*, p. 96.

[192] Ian O. Lesser, *NATO Looks South*, p. 36.

military chief-of-staff Huseyin Kivrikoglu's accused Syria for using terrorism to wage an "undeclared war" against Turkey. [193] Ankara then made it clear that the support for the PKK would no longer be tolerated. As Atilla Ates, then, the commander of Turkish Army sated in October 1998:

> Because of Syrian support for the PKK there actually exists a state of undeclared war between Turkey and Syria. Turkey has been patient, but our patience has limits … Support for the PKK will no longer be tolerated.[194]

With a growing capacity for mobile operations and combat experience from years of cross-border campaigns in northern Iraq, Turkey was determined to use every means possible including the use of force to halt Syrian support for the PKK. Immediate armed clash was averted when Syria acquiesced and agreed not to provide the PKK with arms, logistic and financial support and further agreed to expel the PKK leader Abdullah Ocalan.[195] The Turkish government also stated that it reserved the right to resort to force if Syrian reneged on the agreement. Since then the PKK activity in Syria has diminished greatly and shifted to Iran, although PKK activity in Syrian-controlled areas of Lebonan persists.[196] Over the years, Ankara has had to occasionally warn Syria that it would "suffer the consequences" if it continued to support the PKK.[197] However, it should be recalled that Syria's track record of reneging on pledges to cease supporting the PKK is not very promising. For this reason, the prospects for a Turkish military action over this issue will remain as an option for the Turkish defense planners in the foreseeable future.

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[193] On 6 October 1998, Prime Minister Mesut Yilmaz issued what he described as a "last warning" to Syria over the support for the PKK and was prepared to use all means available to end the Syrian support for the PKK. The Turkish General Chief of Staff and the Turkish parliament have also issued similar warnings and warned that Turkey would take military action unless Syria met certain conditions. The Turkish government called on Syria to stop its support for the PKK, to shut all PKK camps in its territory and to hand over PKK leader Abdullah Ocalan who established his headquarters in Damascus, while Turkish forces began to mass troops on the border. Since then, relations have been mostly described as a virtual state of war. See, "Turks Give Syria Last Warning," *Washington Post*, October 7, 1998; and Howard Schneider, "Turkish Parliament Threatens Syria Anew," *Washington Post*, October 8, 1998.

[194] Atilla Ates, Turkish Army Commander (1998) quoted in, Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," in Barry Rubin and Kemal Kirisci, eds., Turkey *in World Politics: an Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 96.

[195] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," p. 96.

[196] Ibid, p. 97.

[197] Alan Makovsky, " Defusing the Turkish-Syrian Crisis: Whose Triumph?" , *Middle East Insight* The Washington Institute for Near East Policy, January-February 1999.
Available online: http://www.washingtoninstitute.org/media/makovsky.htm.

However, unlike other occasions over the past decade when Turkey sporadically warned Syria to cease supporting PKK but went no further, Turkey's rhetoric and reported troop mobilization on the Turkish-Syrian border was significant in showing Turkey's unprecedented resolve to take military action if necessary. This should be regarded as evidence of Turkey's newfound willingness to use force when it feels directly threatened by its neighbors.

2. Water Conflict

Turkey and Syria are also embroiled in a long-standing dispute over the sharing of the waters of the Tigris and Euphrates Rivers. The source of contention between Turkey and Syria is the huge development project called the Southeastern Anatolian Project (GAP), which envisaged the damming of the Euphrates and integrating a number of hydraulic projects.[198] Syria perceives GAP project as " a strategic threat" not only to itself and to Iraq but to all countries in the region.[199] Syria fears that the GAP dams along the Euphrates will allow Turkey to use water for political blackmail and will create an ultimate dependence on Turkey. Given Turkey's ability to cut off water supplies in wartime, the Syrians also fear that Turkey might deprive them of adequate water supplies during times of tension or hostilities. [200] Syria constantly raises the water issue in Arab organizations to ask for support against Ankara and mobilizes the Arab world to take a common stand against Turkey. The controversies between Turkey and its neighbors over

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198 GAP is the largest and most ambitious regional development project with 22 dams and nineteen hydro-power plants and 1,000 kilometers of irrigation channels and is expected to turn Turkey's southeast into a "paradise." See, Heinz, Kramer, *A Changing Turkey: The Challenge to Europe and the United States* (Washington: Brookings Institution Press, 2000), pp. 136-141.

199 Syrian, and to a certain degree Arab, fears is generally threefold: First, the fear is that Turkey would become an economic giant or "a water giant" with fewer incentives for developing economic relations with Arab countries. The second fear is that it would marginalize Arab countries in the field of agriculture by turning Turkey into a main food supplier in the Middle East and, third and worst of all, that it would enable Turkey to control the supply of water and use it as a strategic weapon against its two neighbors, Syria and Iraq. See, Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No. 48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 2001).

200 Turkey's closure of the Iraqi oil pipeline (1990-1996) during the Gulf crises was given as a case in point, namely Turkey's ability to use the "water weapon" as a card for pressuring Syria and Iraq. Turkey has in the past explicitly linked Syria's backing for the Kurdistan Workers' Party (PKK) with the allocation of water. The Turkish Government has on occasions threatened to withhold or reduce water supplies to Syria unless Damascus withdrew its support for the PKK immediately. See, Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No. 48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 2001), and, Frederick M.Lorenz and Edward J.Erickson, *The Euphrates Triangle: Security Implications of the*

water are not isolated from other conflicts in the region. Clearly, the 30 year-old water dispute, has far reaching political and strategic ramifications, the most important of which is the Syrian escalation of the PKK's war by proxy against Turkey to induce it to solve the water problem.[201]

As the GAP project comes closer to completion and as the hydropower plants and irrigation plans constrain Turkey's flexibility on water release to its downstream neighbors, the friction over sharing the waters of the Euphrates and the Tigris rivers could easily turn contentious. Therefore, in the future an increasing potential for conflict must be expected between the two states. This might not necessarily lead to a water war, although under adverse circumstances such a possibility cannot be excluded.[202]

3. Syria's Territorial Claims on Hatay

Syria's territorial claims on Hatay are another source of resentment, which could surface if relations further deteriorate over the PKK and water issues. For decades Damascus has had claims on the Turkish province of Hatay. Syria has felt aggrieved over Hatay's joining Turkey in 1939 under the terms of self-determination. Damascus regards Hatay as a territory Turkey has stolen from Syria, and like the Golan Heights, its recovery is a national priority.[203] Syrians still consider Hatay as a part of Syrian territory and they show Hatay as a part of Syrian territory on official Syrian maps and in Syrian textbooks.[204] In 1997, Syria made alleged attempts at subversion in Hatay by massing 40,000 Syrian troops along the Turkish-Syrian border.[205] Ankara has long demanded that

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Southeastern Anatolia Project, (Washington: National Defense University Press, 1999).

201 Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No. 48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 200l), p. 66.

202 Ibid.

203 Syrians consider Hatay as the "the gift of Syrian territory to Turkey by the French mandate power in 1939." Hatay, which Syrian's still call the Sanjak of Alexandretta, became the Turkish province of Hatay but no Syrian government has formally accepted Turkish sovereignty over this fertile territory. In the peaks and troughs of Turkish-Syrian relations since Syrian independence in 1946, the Hatay issue has always remained a source of friction. The issue of Hatay is far from settled, and with Syria and Israel inching closer to a deal on the Golan Heights, a further rising of the temperature must be expected. For a detailed analysis see,"Turkey Warns Syria; Talks Nuclear," *Jane's Defense News*, 01 November 2000. Available online: www.janesonline.com

204 A map distributed by Syria in September 2000 at the International Tourism Fair in Berlin showed Hatay as being within Syria. See, "Turkey Warns Syria; Talks Nuclear," 01 November 2000, *Jane's Defense News*. Available online: www.janesonline.com

205 Kemal Kirisci, "Turkey and the Muslim Middle East," in Alan Makovsky and Sabri Sayari, eds.,

Syria drop its irredentist claims on Hatay. As a result of the continuing Syrian claims on Hatay, the border has become increasingly militarized, with Syria's deploying troops to the border and Turkey reinforcing its army in Hatay.

Since Syria's independence in 1936, the subsequent Syrian leaderships have used traditional claims on Hatay as a tool to build domestic support for the regime.[206] As a result, this dispute has long corroded the Turkish-Syrian relations and there have been times when relations have further deteriorated between the two countries. The same may happen with future issues similar to that of the Tigris and Euphrates water supply problem, carrying the risk of a Turkish-Syrian military clash.

4. Turkish-Israeli Military Cooperation

No country sees itself more directly threatened by the emerging Israeli-Turkish military axis than Syria. The alignment stood to impact Damascus both on the military and political level. Militarily speaking, Damascus is particularly concerned about the possibility that Turkey could assist Israel in wartime with Syria. [207] In return, Damascus suspects that Israel is providing Turkey with satellite images of Syrian ground and air defenses.[208] These concerns are further aggravated by a possible scenario of a pincer

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Turkey's New World: Changing Dynamics in Turkish Foreign Policy, p. 46.

206 Ibid.

207 Even without directly participating in a war, Turkey could play an important role in the event of Israeli-Syrian hostilities. On the ground, the Turkish army could mass its forces along its border with Syria aimed at tying down Syria's strategic reserve in much the way that the threat of Turkish intervention tied down tens of thousands of Baghdad's troops in northern Iraq during the 1991 Gulf War. In the air, Turkey could allow damaged Israeli aircraft to land at Turkish air bases and permit Israeli combat search and rescue crews to track downed pilots to operate from its soil. Such a capability would allow the Israeli air force to be more aggressive and to take greater risks when attacking targets in northern Syria.
For a detailed analysis of implications of Turkish-Israeli alliance for Syria, see, Alan Makovsky and Michael Eisenstadt, "Turkish-Syrian Relations: A Crisis Delayed?" *Policy Watch #345*, The Washington Institute For Near East Policy, 14 October 1998. Available Online: http://www.washingtoninstitute.org/turkey/.

208 Turkey could also pass on data derived from reconnaissance flights along its border with Syria using long-range cameras and electronic sensors that can see deep into Syria, or it could allow Israel to use Turkish air bases to launch manned and unmanned reconnaissance flights over Syria itself. Ankara could likewise allow Israeli attack helicopters, aircraft, and commandos hunting Syrian Scud missile launchers in northern and central Syria to operate from Turkish staging areas. Some analysts argue that under certain circumstances Ankara could allow Israel to use the series of air bases that run parallel to its border with Syria for combat missions, raising the possibility of attacks against Syria from Turkish soil. At sea, Turkey could allow Israel to operate out of its naval base at Iskenderun or sanctuaries in Turkish waters near Syria, forcing Syria to split its fleet to defend its exposed coastline against attacks from both north and south. For a detailed analysis of implications of Turkish-Israeli alliance for Syria, see, Alan Makovsky and Michael Eisenstadt, "Turkish-Syrian Relations: A Crisis Delayed?" *Policy Watch #345*, Washington Institute for Near East Policy, 14 October 1998. Available Online: http://www.washingtoninstitute.org/turkey/.

movement from the north and the south by the two strongest armies in the region.[209] Some analysts now argue that in the future Damascus could face the possibility of fighting Israel in the Bekaa and/or the Golan, while having to maintain a portion of its troops along the Turkish border.

Politically speaking, Syria appeared to be the main casualty. Damascus is now worried that the alignment would further strengthen both Jerusalem's and Ankara's bargaining power against Syria. This cooperation engendered a sense of strategic encirclement in Damascus, leading Syria to mobilize regional opposition to the Turkish-Israeli Alliance.[210]

From the beginning, not only Syria and Iran and Iraq but also more moderate Arab states vehemently criticized the "nascent alliance," as they characterized the Turkish-Israeli military cooperation.[211] Furthermore, this trend also initiated dangerous efforts at establishing alliance networks throughout the region, characterized by an Israel-Turkey-Jordan-Azerbaijan axis, on one hand and an Armenia-Greece-Syria-Russia axis on the other.[212] In reaction to Turkey's rapprochement toward Israel, Syria also moved to improve its frozen relations with Iraq and to bolster relations with Iran. For this purpose, intelligence reports indicate that Iraq and Syria have rapidly developed a military cooperation by signing a mutual defense pact in August 2001 and this cooperation is also linked to Iran.[213] In the north, Syria signed a military defense cooperation with Armenia in late August 2001 and is improving its defense ties with Russia, including recent efforts

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[209]Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No. 48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 2001), p. 71.

[210] Syria, the country most affected by the new arrangement, portrayed the alignment in its official bodies as being directed against the Arab nations and its interests, as well as against the anti-Israel Islamic states. According to Syrian Vice-President Abd al-Halim Khaddam, "the Israeli-Turkish partnership was "the greatest threat to the Arabs since 1948" and the U.S.Turkish-Israeli nexus was "the most dangerous alliance we [have] witnessed since the Second World War." At that time, the Syrian government also blamed Israeli-Turkish cooperation for Turkish incursions into northern Iraq, as well as for the October 1998 escalation of Turkish pressure on Syria that led to its capitulation to the Turkish demands. See, Efrahim Inbar, "Regional Implications of The Israeli-Turkish Strategic Partnership," *Meria Jounal*, Vol. 5, No. 2, June 2001.

[211]Kemal Kirisci, "Turkey and the Muslim Middle East," p. 47.

[212] Ibid.

[213] "Iraq, Syria Tighten Strategic Cooperation," *Middle East Newsline*, Vol. 3, No. 341, 23 August 2001.

to buy S-300 air defense missiles.[214] Moreover, Syrian efforts to develop defense cooperation with Greece and Cyprus, accompanied by allegations that Syria was granting landing rights for Greek warplanes, attracted the concerns of Turkish officials.[215]

Syria continues to regard the alignment between Israel and Turkey as a serious threat to its security. Therefore, the prospects for Turkish involvement in a conflict with Syria as well as the potential for Syria's retaliatory actions against Ankara has dramatically increased since 1996.

5. Implications of the Middle East Peace Process

It is quite possible that after a settlement with Israel, Syria may eventually use the conflict with Turkey as an excuse to maintain a large army and security apparatus. Ankara is especially concerned that after such an event Syria might turn its military potential against Turkey to realize its claim on Hatay.[216] In fact, the Syria's ambassador to Washington, made Syrian intentions clear, in May 1998, "after the Golan Heights are taken back from Israel, the time will come to take Hatay from Turkey."[217]

Moreover, once it has secured its southern front, Damascus' hand will also be strengthened in the dispute with Turkey over water rights. Damascus might try to enforce its position in the water dispute by military threats after Syria is relieved of its military precautions against Israel. After a potential Syrian-Israeli understanding of trading their common water problem with respect to the Jordan river, an American-backed Israeli-Syrian pressure on Turkey for surrendering in to Syrian demands on the Euphrates' water allocation should also be expected.[218]

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214 "Syria, Armenia Sign Military Accord," *Middle East Newsline*, Vol.3, No. 346, 29 August 2001.

215 Concern over this cooperation led a prominent Turkish Diplomat (retired), Sukru Elekdag, to argue that since Syria is carrying out a covert war in Turkey and constitutes an immediate threat to Turkey's security for its claims on Turkey's vital interests, Ankara should adopt a " two-and-a-half war strategy" by basing its national defense strategy on an ability to simultaneously fight two and a half wars: against Greece, Syria, and the PKK . In his well-known analysis Sukru Elekdag figured the risk of conflict with Syria prominently. See, Sukru Elekdag, "2-1/2 War Strategy," *Perceptions*, Vol. 1, No. 1 (March-May 1996). Available online: www.mfa.gov.tr.

216 Ofra Bengio and Gencer Ozcan, *Arab Perceptions of Turkey and its Alignment with Israel*, Mideast Security and Policy Studies, No. 48, The Begin-Sadat Center for Strategic Studies, (Ramat Gan, Israel: Bar-Ilan University, 2001), p. 63.

217 "Turkey Warns Syria; Talks Nuclear," *Jane's Defense News*, 01 November 2000. Available online: www.janesonline.com.

218 Heinz, Kramer, *A Changing Turkey*, p. 134.

D. THE LIKELIHOOD OF CBW USE AGAINST TURKEY

Syria would likely refrain from using chemical or biological weapons against Turkey, given its fear of a potential NATO response unless the regime survival is at stake.[219] While it is most likely that Syria would use CBW only as a last resort in a conflict with Turkey, if such a conflict were to erupt it may choose to use such weapons in the earlier stages of such a conflict.

A number of flashpoints still have the potential for CBW use. Syria could use chemical weapons prior to reoccupying the historically claimed Hatay or to stem a potential incursion by Turkey into Syria during the early phases of war.[220]

1. Use of CW to Regain Hatay Province

Syria would have several viable options to use CBW against Turkey. Syria could use chemical weapons to depopulate the mostly Turkic Arab dominated Hatay province prior to reoccupation. CW could also be employed against Turkish troops in the initial stages of combat to assist Syrian troop advancement. This would most likely occur if Syrian forces were intent on swiftly invading Hatay.

The tactical and strategic potential of Syrian chemical weapons suggest that Syria might prefer using chemical weapons at the initial stage of the combat. It should be recalled that by using a combination of volatile (e.g., sarin) and more persistent agents (e.g., mustard, VX), Syria has the capability to use CW in very different tactical scenarios.[221] Sarin is extremely deadly, but it evaporates about as rapidly as water. A Syrian attack to retake Hatay using this agent could inflict high casualties on the Turkish troops near the battlefront. Moreover, because sarin dissipates quickly it could permit the attacking Syrian forces to seize the Hatay province without a major risk to its own troops.

A Syrian attack to retake the Hatay might include the use of sarin munitions. It should be recalled that the Turkish-Syrian border is heavily massed with Turkish troops and whether all the Turkish troops deployed in the area are well equipped with chemical

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219 *Proliferation: Threat and Response*, p. 43.

220 "World Review of CBW Offensive Threat Capability," *Jane's Chemical-Biological Defense Guidebook-Chapter IX.*

221 Eric Croddy, "Syria's Scuds and Chemical Weapons," *Center for Nonproliferation Studies*.

defense equipment suitable for CW environment is not certain.[222] Even if the Turkish troops are well equipped, the Hatay region is a densely populated area, so it is questionable whether the civilians living in the region would have a sufficient amount of protective equipment.

Compared to VX nerve agent, sarin is also relatively easy to disseminate. Due to its viscous nature, VX requires some sort of aerosolization. However, prior to Hatay's invasion, Syria could use VX most effectively to attack Turkish rear areas, including military installations and logistical networks such as the naval ports, airports and train stations in the Iskenderun region. Most people whose skin comes into contact with as little as one drop of VX will most likely die in minutes, unless they receive very swift medical intervention. Furthermore, this nerve agent would remain hazardous in the region for at least several days, requiring labor-intensive and time-consuming decontamination procedures.

It should also be recalled from the capabilities section of this cahpter that Syria's Scud-C missiles, which were originally purchased from North Korea, are being armed for long-range chemical weapons delivery. In 1997, Syria was reportedly in the process of developing cluster bomblets designed for loading nerve agents in Scud-C warheads.[223] Two Scud-C brigades, each equipped with 18 missile launchers, are reportedly deployed approximately 25 km east of Hama. Some 200 Syrian Scud-B missiles reportedly could be armed with conventional ordinance or with chemical warfare agent payloads, including VX.

Syria might prefer using Scud-Bs to strike strategic targets and border security units near the border since the Scud-B has much shorter range (300 km) but has 985 kg payload, which allows Syrian forces to contaminate a large area in a short time by firing the Scud-Bs in a few salvos.[224] Furthermore, because Scud-B missiles are more accurate,

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[222] During crises periods, the number of Turkish troops deployed to Syrian border sometimes reaches tens of thousands. For example, during 1998 crises with Syria, 10,000 Turkish troop reinforcements were deployed to the border in addition to permanently stationed 2nd Army and border security units.

[223] Eric Croddy, "Syria's Scuds and Chemical Weapons," *Center For Nonproliferation Studies*.

[224] "WMD Capabilities in the Middle East/Syria," *Center for Nonproliferation Studies*, Monterey Institute for International Studies. Available online: www.miis.edu.

they may be better suited for direct attacks on Turkish military targets in the Hatay region. Because of the low accuracy but long range of the Scud-C system, prior to the occupation, Syria may adopt the strategy of using Scud-C missiles to deliver chemical warheads on broader areas where Turkish military forces would be deployed to gathering points and to naval ports in Iskenderun, Moreover, depending on where the 500 km-ranged Scud-Cs and (successfully tested but not deployed) 600 km-ranged Scud-Ds are deployed within Syria, the comparatively longer ranges of these missile suggests that they could be used to strike most, if not all, strategic military and civilian targets in Turkey, including the capital Ankara.

3. Use of CBW to Stem a Potential Turkish Offensive in Syrian Territory

Another scenario would be Syria's use of CBW to counter a Turkish offensive aimed at ending Syrian support for the PKK. This could mostly happen as a result of Turkey's newfound willingness to use force to when its interests are directly threatened by its neighbors. In recent years, two trends have prevailed in Ankara's current policy toward Damascus. The first trend is Ankara's growing frustration with Syria's support for Kurdish separatists. This frustration is compounded by Turkey's growing anxieties over the water dispute and Damascus's territorial assertions on Hatay. This anger at Syria over its support for the PKK has been percolating in Turkey since 1984 when the PKK initiated its fight against Turkey. This conflict has taken more than 35,000 lives on all sides. The second trend is Turkey's perception that the military gap between itself and Syria is steadily growing in its own favor. For a long time, Ankara lacked the self-confidence that it could make Damascus pay for its support of the PKK, which Turkey considers a direct threat to its territorial integrity.

Indeed, Some reports now suggest that, since Syria bowed to Turkish PKK-related demands in 1998, Turkey is more convinced that the threat of force is an effective tool against Damascus.[225] Motivated by this notion, if Turkey is convinced that Syria is reneging on the 1998 Adana agreement and continues to provide the PKK with arms, logistic and financial support, Turkey could consider a military action aganist Syria.

[225]Alan Makovsky and Michael Eisenstadt, "Turkish-Syrian Relations: A Crisis Delayed?" *Policy Watch*, No.345, The Washington Institute For Near East Policy, 14 October 1998.
Available Online: http://www.washingtoninstitute.org/turkey/.

Turkey could strike the PKK bases in the PKK controlled Beka Valley in Lebonan and follow with a ground-based Turkish offensive into Syria to punish the Assad regime for its hostility.

In an armed confrontation, Ankara is well placed to achieve an operational success. Syria is preoccupied on other fronts, the Golan Heights and Lebanon, and is in no position to confront Turkey openly.[226] Turkey's ground forces are twice as large as Syria's and more combat-experienced, and most of Syria's ground orders of battle are pinned down on the Golan or in Lebanon. [227] Moreover, according to some analysts, Turkey reckons that Damascus, fearing Turkish-Israeli military coordination, would feel uncomfortable redeploying significant forces to its border with Turkey. Therefore, Turkey could easily make a quick advance in days deep inside Syrian territory, and the Syrian army could suffer enormous casualties. If Syrian forces are unable to halt the Turkish offensives, then it is highly possible that Syria might consider using weapons of mass destruction to stem Turkish incursions into Syrian territory.

A serious PKK-related Turkish-Syrian clash in this manner could have significant consequences for Turkey. Although a large-scale Turkish intervention aimed at toppling the Syrian leadership is unlikely, an unequivocal Syrian ground-defeat might well weaken the current regime and perhaps change the dynamics in the Middle East peace-process in favor of Israel.[228] The situation could easily evolve into a directly threatening character for the survival of the Assad regime. After being defeated on three occasions on the conventional battlefield in 1967, 1973 and 1982, Syria might consider using WMD

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[226] *NATO Looks South*, p. 36.

[227] With a growing capacity for mobile operations, combat-experience and from years of cross-border campaigns in northern Iraq, Turkey's Armed Forces are superior to Syrian armed forces in many aspects. Syria has been hurt by the demise of the Soviet Union and, in contrast to Turkey, has done little to upgrade its military in recent years. The most telling difference, however, is Turkey's air superiority. Turkey has roughly 240 F-16s and skilled pilots who regularly fly combat missions in northern Iraq. Syria, by contrast, has only about 40 modern combat aircraft (MIG-29s and Su-24s) in its inventory and has not had any active engagement since Israel shot 86 of its MIGs out of the sky in 1982. Both on the ground and in the air, Turkey's experience in northern Iraq over the past six years has immensely increased its military self-confidence. This sense of military superiority over Syria is reinforced by Turkey's military cooperation with Israel and it's ongoing military modernization project since the early 1990s. For a detailed comparison of the armed forces of the two countries see analysis in Alan Makovsky and Michael Eisenstadt, " Turkish-Syrian Relations: A Crisis Delayed?" Washington Institute, *Policy Watch*, No. 345, 14 October 1998. Also see, "Armed Forces, Turkey," Jane's Sentimental Security Assessment –East Mediterranean-10. Available online: www.janesonline.com

[228] *NATO Looks South*, p. 37.

against Turkey if the Syrian leadership deemed a total defeat inevitable or the survival of the regime is at stake.

According to Ian O. Lesser, under such conditions, use of WMD against Turkey is a distinct possibility:

> In the case of an open confrontation, if significant amount of Syrian territory is lost or the survival of the Assad regime is threatened, it is not beyond imagining that Syria might employ Scud B and Scud C missiles against Turkish targets, possibly including Ankara. Adana and Iskenderun would be particularly vulnerable. In this case the prospects for escalation would increase, as would the incentives for Turkey to explore future deterrent strategies outside a NATO framework.[229]

However, there are costs for using such weapons, both politically and militarily. If attacked by Syrian CBW, Turkey might retaliate massively with its superior airforce capabilities and more importantly; this might invoke a NATO Article 5 response. This scenario alone gives the Assad regime and Syria's other security elite an incentive for caution against Turkey. However, Turkish defense planners should not dismiss a potential Syrian CBW use because, if the regime in Damascus is convinced that a NATO response is not forthcoming, Syria would most likely consider using CBW against Turkish forces under certain circumstances.

5. CBW Use in Retaliation

Syria has many grievances against Turkey, including the water issue and, more recently, relations with Israel. Resentment also remains at a slow burn over Hatay. Damascus uses the PKK to press Turkey to meet its demands on these issues. However, in the event of a potential war with Israel, Syria may seek to use CBW in retaliation against Turkish assistance to Israel or at least to punish Ankara for failing to meet Damascus' demands on the above issues.

Syria's chemical weapons give Damascus a strategic option to deter—or preemptively attack—its northern nemesis, Turkey. Fearing a strategic encirclement by Israel and Turkey, Syria is very much concerned that Turkey and Israel can take a common military action against it. At least, Syrian strategists are seriously concerned about the possibility of Turkey's assistance to Israel in wartime. Syrian leadership might

consider striking Turkish strategic targets calculating that they could be eventually used for supporting of Israel's wartime effort. Such a move could also be aimed at preventing third party (Turkish) involvement or limiting the scope of Turkey's assistance to Israel.

Although the extent of Turkish military assistance to Israel in the event of a war with Syria would be situation dependent, albeit not openly, there is still a possibility that such an assistance could be a pretext of an eventual Turkish-Israeli common military action. Such an eventuality cannot be ruled out given Syria's intensified CBW arsenal and missile acquisition efforts, which is regarded as a threatening action both by Turkey and Israel.[230] In the event of war with Syria, Israeli aircraft and warships may operate from Turkish territory.[231] By quietly rendering assistance to the Israeli war effort, providing intelligence, missile early-warning data, and refuge for damaged Israeli aircraft or warships, Ankara could be willing to assist Israel to punish a troublesome neighbor. However, this could make Turkey a target for Syrian retaliation possibly with missiles carrying chemical warheads. By threatening to use chemical weapons, Syria may also seek to prevent Turkey from opening a second front in the north. In such a situation, a Syrian CBW employment in the theater could create a dramatically psychological impact on populations of both countries, thereby introducing an element of uncertainty into the Turkish and Israeli military calculations.

Even though no direct a conflict with Syria has occurred since the 1996 Turkish-Israeli military cooperation agreement, there is a new possibility that CBW might be used against Turkey in retaliation for Ankara's cooperation with Israel—even if no actual assistance occurred. Thus, the Turkish-Israeli cooperation could become a Syrian excuse to punish Turkey by asymmetric strategies.

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229 Ibid, p. 38.

230 Heinz Kramer, *A Changing Turkey*, p. 132.

231 The Israeli Air Force's custom-built F-15I long-range strike aircraft, acquired for just such operations, would be far more effective if they could use Turkish air bases or airspace because by shortening the distance to their targets they would be able to carry more devastating weapons loads. Allowing Israel's new German-built Dolphin submarines—possibly armed with long-range surface-to-surface missiles—to use Turkish ports and territorial waters in time of crises would bolster Israel's strategic reach and deterrent power. See, Ed Blanche, " Israel and Turkey Look to Extend Their Influence into Central Asia," Jane's *Intelligence Review*, 01 August 2001. Available online: www.janesonline.com.

V. NATO AND TURKEY: WILL NATO'S SECURITY GUARANTEES BE SUFFICIENT TO DETER WMD USE AGAINST TURKEY?

A. INTRODUCTION

One of NATO's fundamental tasks, based on Article 5 of the Washington Treaty, is to deter and defend against any threat of aggression against the territory of a NATO member state. According to Article 5 of the Washington Treaty:

> The parties agree that an armed attack against one or more of them in Europe or North America shall be considered an attack against them all and consequently they agree that, if such an armed attack occurs, each of them, in exercise of the right of individual or collective self-defense recognized by Article-51 of the Charter of the United Nations, will assist the Party or Parties so attacked by taking forthwith, individually and in concert with other Parties, such action as it deems necessary, including the use of armed force, to restore and maintain the security of the North Atlantic area.[232]

During the Cold War, NATO military planning focused on a well-defined traditional Soviet threat and Turkey, occupying NATO's southeastern flank, provided a bulwark against Soviet expansion. Turkey contributed to the policy of credible deterrence in the European theatre. In return, NATO's collective defense system guaranteed Ankara's national security. Confident about NATO's security guarantees, Turkish military planners assumed that their Middle Eastern neighbors would be deterred from attacking Turkey since that would invoke a NATO response.[233]

However, the momentous changes in Europe since the end of the Cold War, accompanied by a complete reconsideration of NATO strategy, have raised questions about the efficacy of this approach. In contrast with its European allies, Turkey is the only NATO ally that faces several serious potential territorial threats from (Iran, Iraq and Syria), as well as proximate risks from nuclear, biological, and chemical weapons and

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[232] Article 5, The North Atlantic Treaty, Washington D.C., April 4, 1949, *NATO Handbook: 50th Anniversary Edition* (Brussels: Belgium, Office of the information and Press, 1998-1999), pp. 23-31.

[233] Kemal Kirisci, "Post Cold-War Turkish Security and the Middle East," *Middle East Review of International Affairs*, No. 2, 1997, p. 8.

ballistic missiles—all definable as Article 5-type contingencies. Additionally, 13 out of the 16 potential crisis scenarios identified by NATO analysts are in Turkey's geographical vicinity.[234]

Therefore, it should be noted that the Alliance continues to have important Article 5 responsibilities in the south, particularly on Turkey's borders. Some key contingencies for the Alliance could involve the defense of Turkey itself.[235] Deterring and defending against these risks should be among the core objectives of NATO strategy and will be certainly an important test for the Alliance's credibility. As David Yost put it, "Yet there are grounds to question whether and to what extent the Allies can sustain the centrality of collective defense in the absence of an overriding and substantial threat to Alliance security, such as the Soviet Union once posed."[236]

Indeed, doubts are often expressed about whether NATO would come to Turkey's defense if Turkey's security was threatened by developments in the Middle East. Among Turkish security elites, for the first time, the question of whether the "strong link" to the Western security system, namely NATO, can still be regarded as a reliable and credible element of the country's security is now discussed frequently.[237] A general feeling has emerged in Turkey that the alliance has a limited ability to guarantee the country's security against the new risks in the Balkans and the Middle East. Additionally, NATO's search for a new role, strategy, and organization has created a certain uneasiness about the real political value of Turkey's existing Alliance bonds. As a result, in recent years while Turkey's threat perception has heightened, its trust in NATO or U.S. extended deterrence commitments has diminished.[238] This new context and doubts about the

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234 These 16 regions are: Bosnia-Herzegovina, Sandazk, Kosovo, Montenegro, the Albania-Macedonia border, Nagorno-Karabakh, Chechenya, Georgia-South Osettia, Northern Iraq, Iran, Syria, Cyprus, Voyvodina, Prevleka, Belarus. Source: Guldener Sonumut, " Turkey amidst Crises Regions," NTV-MSNBC, 13 November 2000. Available online: http://www.ntvmsnbc.com/news/4605.asp. Also see Bill Park, "Turkey Delays EU Defence Plans," *Jane's Intelligence Review*, August 2001. Available online: www.janes.com.

235 Ian O. Lesser, *NATO Looks* South, p. 59.

236 David S. Yost, *NATO Transformed: The Alliance's New Roles in International Security*, p. 277.

237 Heinz Kramer, *A Changing Turkey: Challenge to Europe and the United States*, (Washington D.C.: Brookings Institution Press, 2000), p. 202.

238 Efraim Inbar, "The Strategic Glue in the Israeli-Turkish Alignment," in Barry Rubin and Kemal Kirisci, eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 118.

credibility of NATO's security guarantees have opened the way to a new defense strategy such as the close Israeli-Turkish cooperation, which offers a deterrence dividend.

Turkey's growing engagement in the Middle East could lead to collective defense challenges for the Alliance. Many European allies strongly oppose broadening NATO's area of responsibility and want the Alliance to focus on security threats to the Euro-Atlantic area. Some allies, particularly Germany, France and possibly Italy and (obviously) Greece, might balk at aiding Turkey if it became involved in a skirmish with one of its Middle Eastern neighbors, such as Iran, Iraq or Syria. [239] However, a failure of NATO to come to Turkey's aid in such a case could create a crisis in Turkey's relations with NATO and could even prompt Turkey to withdraw from the Alliance. Moreover, a clash with any of Turkey's Middle Eastern neighbors, in which NATO support was not provided, would jeopardize the Alliance's cohesion and credibility.

This chapter analyses the credibility and reliability of NATO's security guarantees, including the nuclear guarantees the United States provided under NATO auspices. This chapter analyzes five questions:

- If Turkey came under attack by a WMD-armed adversary such as Iran, Iraq or Syria, would the other NATO allies interpret this as a case involving the Article 5 mutual defense commitment? Or would the Allies fail to respond due to a declining sense of commonality of interests within the alliance?
- To what extent can one differentiate among adversaries and circumstances to reach judgments about the probable effectiveness of NATO's overall deterrent posture?
- Will NATO's security guarantees be sufficient to deter WMD use against Turkey?
- What are the obstacles to an effective—and timely—NATO response to NBC-backed aggression against one of the allies?
- What are the implications of the Alliance's collective defense challenges for Turkish security?

This chapter considers the possibility that NATO's security commitments to Turkey—including U. S. nuclear guarantees—might not be sufficient to deter WMD use

[239] Zalmay Khalilzad, Ian O. Lesser and F. Stephen Larrabee, The Future of Turkish-Western Relations: Toward a Strategic Plan (Santa Monica, Calif., RAND, 2000), p. 42. Also see Ian O. Lesser, *Bridge or Barrier: Turkey and the West After the Cold War* (Santa Monica, Calif.: RAND, 1992), pp. 14-15.

against Turkey in a potential Middle Eastern contingency. Given the possibility of a limited regional conflict as a result of aggression against Turkey, NATO's Article 5 mutual-defense pledges may not be honored in all circumstances. Indeed, many obstacles to an effective NATO response may be analyzed in two categories: NATO's internal cohesion problems and NATO's challenges in protecting its population, forces and territory (as defined in Article 6) against nuclear, chemical, and biological weapons and ballistic missile attacks.

B. NATO'S INTERNAL COHESION PROBLEMS

1. The Alliance's New Roles and Emphasis on Non-Article 5 Missions

The Alliance's new functions in support of collective security raise questions about its long-term cohesion. The shift of the Alliance's emphasis from the defense of members' territory to the defense of common interests, particularly non-Article 5 activities including crisis management and peace operations in support of collective security, "could have ambivalent effects on the Alliance's collective defense posture."[240]

Indeed, controversial crisis management and peace operations could seriously undermine the alliance's cohesion and solidarity. This could undermine NATO's unity and thus the conditions necessary for maintaining its ability to carry out its ultimately more vital mission of collective defense. Moreover, these operations may require capabilities, training, and command and control procedures and thus resources different from those needed for large-scale Article 5 (collective defense) contingencies. This means that in a time of decreasing defense budgets in most NATO European members, allies have been dedicating already scarce resources to non-Article 5 activities instead of the collective defense missions of deterring aggression or coercion against. Indeed, there are increasing concerns among some NATO allies about the decline in the Alliance's high-intensity combat capabilities. [241]

NATO's failure to honor vague "security is indivisible" pledges or some NATO members' expectations that the Allies would in certain circumstances form coalitions and commit forces to intervene could erode the Alliance's cohesion, causing frustration and

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[240] David S. Yost, *NATO Transformed: The Alliance's New Roles in International Security* (Washington D.C.: U.S. Institute of Peace Press, 1998), p. 259.

[241] Ibid, p. 260.

disillusionment in some of the Allies. Indeed, the initial reluctance of NATO Allies, particularly the United States and some European Allies, to take military action in Bosnia to stop the ethnic conflict caused some frustration in Turkey about the selectivity of their approach—even though Bosnia represented a non-Article 5 security challenge. In Turkey's view, Article 5 has been undermined by NATO's recent focus on peacekeeping and humanitarian operations as well as by NATO's initial reluctance to take action in the Kosovo conflict.[242]

Maintaining the proper balance between sustaining the Alliance's core function of "collective defense" and its new "collective security" roles is significant for Turkish security. In contrast with its European Allies, Ankara continues to regard threats to its borders as a serious concern. Therefore, there is a notable divide within the Alliance between Turkey and its European allies on the question of traditional Article 5 missions oriented toward the defense of territory versus non-Article 5 missions aimed at the defense of common interests. NATO's shift in emphasis, its diversion of its scarce resources and efforts from traditional Article 5 missions of collective defense to activities in support of collective security, worries Turkish security elites. Ankara does not support the dilution of the Alliance's traditional emphasis on collective defense (Article 5) and has been uncomfortable with the Alliance's emphasis on the new missions and non-Article 5 contingencies.[243] The Alliance's collective security commitments might complicate the pursuit of other NATO priorities—e.g., ballistic missile defenses.

The expansion of NATO's commitments beyond the mutual defense pledges expressed in Article 5 of the North Atlantic Treaty could also erode the Alliance's coherence.[244] Indeed, deep disagreements between the United States and its major European Allies in 1992-95 over NATO's responsibilities in dealing with the conflicts in the former Yugoslavia suggest that it would be more difficult for NATO to maintain the Alliance's cohesion in future contingencies. Some analysts now argue that "the Alliance may be taking on too many new roles, thereby creating expectations that cannot be

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242 " Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, 30 July 2001. Available online: http:// ebird.dtic.mil/Jul2001/s200110731turkeys.htm.

243 Zalmay Khalilzad, Ian O. Lesser and F. Stephen Larrabee, *The Future of Turkish-Western Relations: Toward a Strategic Plan*, p. 42.

244 Ibid.

satisfied."[245] Some further "argue that NATO may suffer from a loss of focus and a dispersion of effort" as it accepts responsibility for collective security roles.[246] According to David S. Yost, NATO's shift in emphasis to non-Article 5 missions could pose genuine risks for the Alliance:

> One of the fundamental risks is that the new roles may weaken the Alliance's cohesion and undermine its ability to carry out the core traditional mission of collective defense. Each of the new roles holds the potential for a divergence of interests among the NATO countries and NATO's new partners in the Partnership for Peace and other institutions.[247]

However, these activities must not prevent the Alliance from sustaining its core function of "collective defense" while conducting its new "collective security" roles. Future demands for NATO involvement in crisis management and peace operations could nonetheless create new resentments and debates among the Allies. The Alliance's cohesion therefore might become even more difficult to maintain.[248]

2. Downgrading of NATO's Collective Defense Function

Limited regional contingencies, particularly on Turkey's eastern borders, could pose great challenges for the Alliance's cohesion. Most NATO European allies strongly oppose the idea that Turkey's involvement in Middle Eastern affairs and its current problems with its three neighbors should be considered potential Article 5 cases, fearing that this approach might lead to out-of-area threats to Europe. They argue that many of these problems originate in the deeply rooted mutual antagonisms and historical rivalries that existed long before Turkey joined NATO. Given the disagreements between Turkey and the EU over the latter's efforts to create a rapid reaction force, friction over Turkey's application for EU membership, the Cyprus problem, and controversies over the PKK and Kurdish issues, some European Allies might hesitate to accept responsibility for Turkey's defense. However, the Alliance's failure to address Turkey's security concerns could damage the already problematic relations between Turkey and its European Allies.

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[245] Yost, NATO *Transformed*, p. 271.
[246] Ibid.
[247] Yost, *NATO Transformed*, p. 271.
[248] Ibid, p. 269.

According to David Yost, limited regional collective defense contingencies could present distinct challenges for the Alliance:

> A limited, subregional collective defense contingency could present problems for Alliance cohesion and decision making greater than those foreseen during the Cold War. It might be a challenge to convince some Allies that the crisis should indeed be regarded as an Article 5 case, and that their obligations under that article should be honored. The sense of a commonality of interest has declined with the disappearance of the unifying threat represented by the Soviet empire.[249]

Turkey is increasingly concerned about the application of Article 5 of the Washington Treaty. Ankara lacks confidence that European NATO members would respond with military action if Ankara invoked Article 5—a suspicion that surfaced during the 1990-1991 Gulf War.[250] Most NATO European members contend that Turkey's growing exposure to risks in the Middle East could create problems for Turkey's relations with NATO and could drag NATO into potential conflicts, in which "it has very little direct interest."[251] There is growing evidence that the European members of NATO no longer believe that Turkey is vital to their security and, because of commitments established under the Washington Treaty, see Ankara as a potential liability and drag on their own military strength.[252]

In contrast, Turkey continues to regard threats to its borders as a serious concern and thus retains a more conservative view of maintaining the Alliance's emphasis on collective defense responsibilities. However, disagreements among the Allies over NATO's geographic boundaries and Article 5 responsibilities may have significant implications for Turkey. The unwillingness of some Allies to commit resources to prepare for subregional contingencies may constitute a serious impediment to the conduct of the Alliance's collective defense missions. As Yost has observed, this might be especially true in a regional contingency involving Turkey:

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249 Ibid, p. 265.

250 " Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, Early Bird, 30 July 2001. Available online: http:// ebird.dtic.mil/Jul2001/s200110731turkeys.htm

251 Ibid.

252 " Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, 30 July 2001.

> [S]ome Allies may be unwilling to assume risks and contribute forces if certain contingencies actually arise. For example, some Allies might question whether a conflict between Turkey and one of its neighbors in the Caucasus, the Middle East, or the Mediterranean should be interpreted as an Article 5 case. [253]

Ankara's bitter experiences during the 1990-1991 Gulf War suggest that Alliance cohesion problems could pose serious obstacles to an effective and timely NATO response to NBC-armed aggression against Turkey. NATO's failure to provide a determined response to the Turkish requests for reinforcement units from NATO's multinational rapid reaction force, including air defense assets, strongly reinforced the existing Turkish concerns and suspicions about "selective solidarity."[254] The German reluctance to provide Turkey with Allied Command Europe (ACE) Mobile Force-Air (AMF) reinforcements provoked bitter reactions in Turkey, and Ankara accused Germany of being an unreliable Ally.[255] The experience resulted in ill will and made Ankara highly sensitive to restricting the meaning of Article 5.[256] Despite the initial reluctance, Germany sent an AlphaJet squadron to Turkey in January 1991 as a part of Allied Command Europe Mobile Force reinforcement and German air defense units followed the next month.[257] However, since then, many members of the Turkish security elite have expressed serious concerns and doubts about the robustness of the Allied commitments.

This incident suggests that political considerations and domestic concerns of some Allies might well become a serious impediment to the Alliance's ability to act collectively on behalf of a threatened ally.[258] The debate in the German parliament about whether to send reinforcements to Turkey in 1990-1991 was remarkable in this regard. It revealed how diverse allied perceptions about responsibilities under Article 5 of the

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253 Yost, *NATO Transformed*, p. 277.

254 Ian O. Lesser, *NATO Looks South, p*. 37.

255 Ibid.

256 " Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, 30 July 2001. Available online: http:// ebird.dtic.mil/Jul2001/s200110731turkeys.htm.

257 Yost, *NATO Transformed*, p. 266.

258 Some observers argue that during the time, the German government's hesitation mostly stemmed from concerns about provoking a Soviet reaction (Moscow had yet to ratify the treaty on German reunification as well as other accords) and, more importantly, concerns about a potential German public reaction. See David S. Yost, *NATO Transformed,* p. 266.

Washington Treaty might be, especially in sub-regional contingencies in which European interests may not be directly involved. Moreover, the debates at the time offer some clues about how limited the Allied contributions might be when Allies are asked to make actual defense commitments, especially if the threatened Ally is regarded as no longer vital to their security interests. As Karl Kaiser and Klaus Becher have observed:

> Virtually all leaders and experts in the SPD [the Social Democratic Party], as well as some representatives of the governing coalition parties, stated that by allowing U.S. planes to operate against Iraq from Turkish bases, Turkey had provoked Iraq. Therefore, a possible Iraqi attack, or "retaliation," against Turkey could not lead to the discharge of German obligations to assist in the defense of Turkey under Article 5 of the North Atlantic Treaty. In the words of opposition leader Hans Jochen Vogel, otherwise NATO would be turned into an alliance for the support of offensive operations *(Angriffsoperationen*)…. Those who rejected German support in the hypothetical case of a so-called "provoked NATO obligation" (*provozierter Bündisfall*), even under conditions of a UN mandate, increasingly appeared to run away from any German political or moral obligation whatsoever, let alone political debt. In fact, Germany was only asked to grant a small fraction of the support which it had itself received over four decades and to which it owed its freedom and its prosperity, as well as its recent unification.[259]

In other words, Turkey's "experiences during the 1990-91 Gulf War suggest that genuine Alliance cohesion problems could arise in subregional collective defense contingencies."[260] As Germany's hesitant response suggests, some Allies might refuse to take responsibility for the defense of Turkey, questioning whether a conflict between Turkey and one of its neighbors in the Middle East should be regarded as an Article 5 case.

As Zalmay Khalilzad, Ian O. Lesser and F. Stephen Larrabee recently observed, incidents like this could undermine the Alliance's credibility:

> Germany's hesitant response to Turkey's request for Allied Mobile Force-Air reinforcements during the Gulf crisis highlights this problem. To many Germans, deterring a possible attack by Iraq was not what NATO was all about. To many Turks, on the other hand, Germany's ambivalent response

[259] Karl Kaiser and Klaus Becher, "Germany and the Iraq Conflict," in Nicole Gnesotto and John Roper, eds.,*Western Europe and the Gulf* (Paris: Institute for Security Studies, Western European Union, 1992), pp. 49-50, quoted in David S. Yost, *NATO Transformed*, p. 266.

[260] Ibid, p. 266.

> called into question the validity of the Article 5 (collective defense) of the Washington Treaty and raised broader doubts about the utility of NATO membership.[261]

Ankara's doubts and suspicions about the Alliance's reliability in fulfilling its responsibility toward Turkey could further fragment the Alliance, thereby creating serious collective action problems in future contingencies. As a former senior NATO officer at a RAND conference recently concluded, " NATO responsibility toward Turkey was a very contentious issue during the Cold War, and there is no doubt that Turkey's future role in Europe's security structure will again be contentious."[262] During a crisis, this could create serious uncertainties in Ankara about whether the Alliance would be committed to defend Turkey against aggression. This might also send a counterproductive message to the potential adversaries in the Middle East, and they might calculate that NATO might not back Turkey in a potential clash with them. This might even encourage the aggressors to pursue a more determined and vigorous policy against Ankara while attempting to dictate their preferred solutions to the problems. If convinced of the fragility of the Alliance's commitments to Ankara, the aggressor might use nuclear, chemical or biological weapons (perhaps delivered with ballistic missiles) to strain the Alliance's cohesion, thereby limiting the possibility the Alliance's intervening on behalf of Turkey. The aggressor might assume that European countries vulnerable to missile attacks would not take risks for the defense of Turkey at a time when they are already questioning the validity of their responsibilities toward Ankara.

3. NATO Enlargement

NATO's further enlargement might have direct implications for the Alliance's cohesion as well as for its ability to carry out its traditional mission of collective defense. Turkey fears that a larger NATO could be an alliance with more conditional and less automatic security guarantees for its members.[263] There is high sensitivity in Ankara about the longer-term effect of enlargement on NATO's security guarantees. Turkey's concerns center on the likely dilution of the Alliance's attention and resources, and the

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[261] Zalmay Khalilzad, Ian O. Lesser and F. Stephen Larrabee, p. 42.

[262] "Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, 30 July 2001. Available online: http:// ebird.dtic.mil/Jul2001/s200110731turkeys.htm.

[263] Ian O. Lesser, *NATO Looks South*, p. 50.

shift of Alliance influence to eastern portions of the Euro-Atlantic region, but with particular repercussions for the allies in the south. This consideration is also enhanced by the widespread concern in Turkey that the accession of Poland, Hungary and the Czech Republic could strengthen Central and East European—especially German—influence in European and transatlantic affairs, reinforcing an eastward-looking bias in NATO strategy.[264] Indeed, as David Yost recently put it, some NATO observers on both sides of the Atlantic are also concerned about certain potential negative implications of an enlarged Alliance:

> Some observers hypothesize that in an enlarged Alliance it may become more difficult to gain and maintain an acceptance of responsibility for the defense of others, particularly for new Allies contemplating contingencies located far from their traditional area of political-military activity and cultural identification. For instance, some observers have asked, will the Poles feel responsible for the defense of Turkey? If Syria or Iraq attacked Turkey, would Hungarians ask, "What is that to us?" The fragmentation of the Alliance may be increasingly hard to resist in limited, subregional collective defense contingencies, to say nothing of "optional " non-Article 5 cases involving crisis management and peace operations.[265]

Turkey, with multiple security risks on its borders, is especially concerned about reaffirming the Allies' Article 5 commitments in the light of the enlargement process, which is widely seen as introducing a new spirit of conditionality in Alliance security commitments. Some European observers have expressed similar concerns about NATO's enlargement:

> How credible would Article 5 collective defense guarantees be in an expanded Alliance? … Are the West Europeans prepared to make Article 5 commitments only because the putative Russian threat is now minimal, and because the United States is seen in both Eastern and Western Europe as the ultimate guarantor of the Alliance's collective defense pledges? Would new allies honor their Article 5 commitments if they felt exposed to Russian pressure?[266]

Indeed, there are grounds for Turkey's reservations regarding NATO's further enlargement. For example, although NATO contingencies remain in the south on

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[264] *NATO Looks South*, p. 51.

[265] Yost, *NATO Transformed*, pp. 265-266.

[266] Ibid, p. 130.

Turkey's borders, most Alliance resources remain north of the Alps.[267] Additionally, the costs associated with the integration of the new NATO members tend to squeeze the already tight European defense budgets and may inhibit meeting the requirements for permanently based assets in the south, especially in Turkey, which would probably provide NATO staging areas during a potential crisis.

4. Other Obstacles

Budget constraints as a result of the current trends of reducing defense spending in most NATO European countries, the lack of an immediate threat perception, the prominence of social priorities other than national defense, the Western aversion to casualties, and the EU's proposed European Security and Defense Policy (ESDP) might also constitute genuine obstacles to implementing NATO's collective defense commitments. As far as threat perceptions are concerned, the evidence suggests that the threat perceptions among the European allies are not as acute as those in Turkey and the United States and thus there is no sentiment of being threatened.

The Western (especially U.S.) aversion to casualties could also become an important impediment to an Alliance decision to become involved in risky sub-regional contingencies, especially against an NBC-armed aggressor. Indeed, no Western country has suffered major civilian casualties on the home front from an external military source since the end of World War II.[268] Therefore, in case of armed aggression against Turkey, the prospects for a NATO response would probably depend in part on how heavily U.S. and European casualty aversion would weigh on Western decision makers. Operation Desert Storm (1991) and Operation Allied Force (1999) suggested to many observers that Western military forces might be able to fight wars in the future without suffering large-scale losses. However, this might be a cause of Western inaction in future NATO contingencies involving a WMD-armed adversary. Such sensitivity could be seen during the Kosovo conflict in 1999 when at the outset President Clinton announced that no

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[267] *NATO Looks South*, p. xi (Summary)

[268] K.S. Balshaw, Wing Commander, RAF, "Spending Treasure Today but Spilling Blood Tomorrow: What Are the Implications for Britain of America's Apparent Aversion to Casualties," *Defense Studies*, The Journal of the Joint Services Command and Staff College, Vol.1, No.1, Spring 2001, pp. 87-112.

American ground troops would be sent into combat in Kosovo.[269] According to a poll during the conflict in Kosovo:

> About half of all Americans say they are unwilling to lose any American soldiers to help bring peace to Kosovo. Even a third of those who favor sending in ground troops would reconsider if it meant Americans would die. The poll also suggests that support for ground troops would plummet sharply as casualties mounted. Only three in 10 would be willing to accept the loss of 100 U.S. soldiers to win the peace.[270]

Concerns about the U.S. aversion to casualties were also reflected in the following statement by General Philippe Morillion, Commander of the UN Forces in Bosnia:

> Desert Storm left one awful legacy; it imposed the idea that you must be able to fight the wars of the future without suffering losses. The idea of zero-kill as an outcome has been imposed on American generals. But there is no such thing as a clear or risk-free war. You condemn yourself to inactivity if you set that standard.[271]

Moreover, conflict resolution in Kosovo showed a European casualty aversion. Most NATO European Allies excluded the employment of ground forces in combat and relied solely on the use of combat aircraft.[272] Thus, in a high-risk environment in which an adversary might possibly employ chemical and biological weapons against deployed NATO forces, the prospects for a determined NATO military response to a WMD attack against a member state might be highly limited.

The European Union's effort to create a new rapid reaction force independent of NATO also has the potential to undermine Alliance cohesion. The European Security and Defense Policy (ESDP) has the potential to virtually shut Ankara out of the key elements of European Union's security policy and planning.[273] Thus, Turkey, under wider stress,

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[269] Martin Aguera, "US Readiness Problems Show Why European Capabilities Will Be So Important," *Comparative Strategy*, vol. 20, 2001, pp. 271-276.

[270] Richard Morin and Claudia Deane, " The Balkans Conflict Becomes Personal," *Washington Post National Weekly Edition*, 12 April 1999, p. 34.

[271] K.S. Balshaw, Wing Commander, RAF, "Spending Treasure Today but Spilling Blood Tomorrow: What are the Implications for Britain of America's Apparent Aversion to Casualties," *Defense Studies, The Journal of the Joint Services Command and Staff College*, Vol. 1, No. 1, Spring 2001, p. 87.

[272] Martin Aguera, "US Readiness Problems Show Why European Capabilities Will Be So Important," pp. 271-276

[273] Bill Park, "Turkey Delays EU Defense Plans," *Jane's Intelligence Review*, August 2001. Available online: www.janes.com.

could be further alienated from the West, putting the prospects for credibly relying on NATO's security guarantees into question. The central concern in Ankara is the potential damage to NATO. EU efforts that divert the Alliance's focus from the traditional core mission of NATO could diminish support for U.S. engagement in Europe and could make military cooperation even more difficult.[274] The European Union initiative also carries the risk of creating a caucus of European member states within NATO, which could be detrimental to decision-making in both the Alliance and European Security and Defense Policy.[275] According to a recent analysis by Kori N. Schake, a caucus

> [c]ould make consensus building more difficult if states were unwilling to compromise on elements that represent hard-won EU internal consensus. Finally, it could slow the pace of decisions if Alliance consultations were prevented until EU states agreed to a position to present in NATO counsels.[276]

Turkey's refusal to approve EU proposals that the proposed force have automatic access to NATO military planning facilities could result in the EU creating a separate military planning mechanism. This would mean that NATO European Allies might not want to be involved in Turkey's Middle Eastern problems unless vital European interests are at stake. Therefore, although the ESDP may not be wholly blamed for the divergence among NATO Allies, it carries the risk of aggravating existing problems within the Alliance.[277] Turkey is especially concerned about a potential—or de facto—U.S. "decoupling" from European security affairs as a result of an autonomous ESDP outside of the NATO framework. For Ankara, any change in NATO that points to more European influence at the expense of U.S. engagement or that promotes the role of European Union institutions could well result in a less credible and reliable NATO.

Moreover, the debate over the EU's efforts to create a rapid reaction force could split the Alliance wide-open, causing identity crises within NATO.[278] Conflict over

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[274] Kori N. Schake, "Do European Union Defense Initiatives Threaten NATO?" *Strategic Forum*, Institute for National Strategic Studies National Defense University, No. 184, August 2001, p. 4.

[275] Ibid.

[276] Ibid.

[277] Ibid, p. 5.

[278] "Turkey's Defense Plan Sparks NATO Debate," *Stratfor.com*, 30 July 2001. Available online: http:// ebird.dtic.mil/Jul2001/s200110731turkeys.htm.

Turkey's role in NATO and Ankara's exclusion from political, economic and security organizations could cause a rift between Turkey and its European allies. Even the conflict among the Allies over NATO's geographic boundaries could spread to disagreement over its very mission, challenging the alliance's survival. This could lead to a renationalization of Ankara's security strategy to counter rising threats from its Arab neighbors and Iran. Ankara thus opposes any weakening of NATO's role and efforts to transfer planning and decision making over defense matters to the EU.

C. RISKS POSED BY WEAPONS OF MASS DESTRUCTION

1. Use of WMD: A Challenge to NATO?

WMD poses a direct military threat to the Alliance members, particularly to those already within the range of missile attacks and to their deployed forces dispersed all over the world. There are increasing indications that states of security concern see weapons of mass destruction, in particular chemical and biological weapons and their delivery means, as a viable means of countering NATO's conventional military superiority. For instance, at least a dozen countries are believed to maintain active offensive BW programs, and many with the political will and requisite scientific base could therefore produce and ultimately use biological weapons.[279] Moreover, many nations known to be developing chemical and biological weapons are also developing or acquiring effective longer-range ballistic missile systems. Therefore, the threat to the Alliance is expected to broaden and deepen over the next decade.

Limited sub-regional conflicts and interventions beyond the Euro-Atlantic region could increase the risk of facing adversaries armed with weapons of mass destruction (WMD). The strategic rationale for regional actors using WMD could primarily be to deter Western forces from becoming involved in regional conflicts by influencing public opinion, so the dispatch of Western troops in a risky environment is put into question, with the eventual aim of causing their total withdrawal. A hostile country on NATO's periphery could threaten or actually employ chemical or biological agents against Allied territory, population, or forces. This could undermine NATO's ability to conduct

[279] U.S. Government, *The Worldwide Biological Warfare Weapons Threat* (Washington, D.C.: U.S. Government Printing Office, 2001), p. 24.

essential defense missions, both in protecting Alliance territory and populations and in out-of-area regional conflicts.[280]

However, NATO's vulnerability to chemical, biological and missile attacks could have grave consequences for Turkey. Turkey is now the NATO ally most exposed to missile and WMD attacks, and it is only a question of time before West European cities can be attacked with missiles armed with WMD from the states on Europe's southern periphery.[281] Thus, chemical and biological weapons might have considerable impact in the force building stage of a NATO out-of-area operation and during the warfighting stage. The early use of these weapons, particularly biological weapons, in a conflict, or even before conventional hostilities begin might provide greater leverage for the aggressor. By employing biological weapons against NATO's strategic assets, including forward mounting bases, sea and airports, and other logistic and command, control and communication facilities in the exposed members' territory, the aggressor could alter the Alliance's calculations and disrupt its ability to intervene on behalf of the attacked member.

Moreover, seen by the proliferant states as an effective military tool, as well as an effective instrument of terror, the use of CW could also have a dramatic effect on NATO troop performance, particularly in out-of-area operations; it could even inflict profound political consequences by sapping the NATO forces' will to fight. In addition, given the Western aversion to casualties, the use, or even the threat, of biological and chemical weapons might weaken the host nation's support (particularly if the local civilian population is affected). This could be perceived by the aggressor as a viable means to break the cohesion and resolve of the Alliance.

During the early stage of a campaign this could seriously undermine the NATO forces' ability to achieve their objectives if adequate protective measures have not been taken. Thus, the ability of the NATO allies to cooperate in order to defeat the threats against their common interests might well be impaired if hostile regimes in the Middle

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[280] Gregory L. Schulte, " Responding to Proliferation: NATO's Role," *NATO Review*, July 1995, pp. 15-19.

[281] Zalmay Khalilzad, Ian O. Lesser and F. Stephen Larrabee, *The Future of Turkish-Western Relations*, p. 88.

East hold Istanbul, Rome, Paris, Berlin, and London hostage to retaliatory attacks. In the absence of effective missile defenses, by targeting Alliance populations, potential adversaries could profoundly disturb NATO's ability to intervene beyond its borders.

In the case of NBC-backed aggression against Turkey, aggressors might well believe that Turkey's Western Allies would not trade their cities to protect Istanbul or Ankara. The presence of deployed U.S. troops throughout Europe, including Turkey, could also complicate any unilateral military action by the United States even if North American cities were not vulnerable to the aggressor's possible WMD retaliation. Even NATO contingency planning regarding the defense of Turkey itself might be altered by potential NBC use in the region. At minimum this exposure to the retaliatory consequences of Western intervention could sharpen the existing debates about Western access to Turkish bases and defense cooperation between the European allies and Turkey.[282]

NATO's ability to address WMD proliferation risks is still being developed. The Alliance needs to overcome a number of obstacles. First, the questions of how the Allies perceive the threat and whether they see NBC and missile proliferation as a fundamental threat in the new security environment are still unresolved. Public opinion in Western Europe is barely prepared, for the time being at least, to discuss risks and threats involving the proliferation of weapons of mass destruction.[283] There is no consensus on addressing the specific regions or the threats posed by nations of proliferation concern due to economic ties and the relatively good relations of some allies with some states of proliferation concern. The Alliance even has problems in reaching a consensus on risk assessments of certain countries. There are still unanswered political questions about the for Alliance's ability to fully implement NATO's new counter-proliferation programs. Moreover, competing priorities, especially in a context of NATO enlargement and its associated costs, decreasing defense budgets, and the lack of an immediately perceived

[282] Ibid.

[283] Joachim Krause, "Proliferation Risks and Their Strategic Relevance: What Role for NATO?" *Survival,* Vol. 37, No. 2, Summer 1995, p. 135.

WMD threat to European territory and populations make NATO European Allies unenthusiastic about funding any ambitious WMD defense programs.[284]

Another issue of concern is that the Allies disagree about how to deal with WMD proliferation challenge and specific proliferant states. For example, the difference in approaches concerning key proliferators such as Iraq and Iran, suggests that discord within the Alliance may exist about dealing with these "rogue" states. Some capitals in Europe are still unwilling to abandon their emphasis on traditional non-proliferation prevention policies and programs. [285] The belief that nonproliferation regimes are still sufficient to meet WMD challenges may prevail in these capitals, especially when they are confronted with domestic opposition and fiscal constraints. The same European Allies may even see counter-proliferation measures as counterproductive and damaging to current nonproliferation efforts. They may also argue that the potential proliferant could misinterpret counter-proliferation measures as a Western attempt to use force preemptively.[286]

Under these circumstances, some allies might be deterred from participating in an intervention in which the risk of WMD use is high.[287] In interventions beyond Europe, the Alliance might need to conduct counterforce operations in response to an NBC attack against NATO territory. Such operations could involve preventive, preemptive, or retaliatory strikes. However, given the diverse allied perspectives about how to counter WMD threats, the prospects for a preventive NATO strike against WMD production facilities or the possible preemptive destruction of WMD agents and missile launchers would be quite limited.[288] As Michael Rühle put it:

> NATO, given its democratic, multinational, and defensive nature, is incapable of any deliberately planned offensive action …. It is simply inconceivable that NATO **A**llies would find the political will to launch a preventive military strike even against the facilities of a state which

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[284] Jeffry A. Larsen, "The Development of an Agreed NATO Policy on Nonproliferation," NATO Research Fellowship Program 1995-1997, p. 38.

[285] Robert G. Joseph, "Proliferation, Counterproliferation, and NATO," *Survival*, Spring 1996, p. 126.

[286] Ibid.

[287] Yost, *NATO Transformed*, p. 245.

[288] Ibid.

> persisted in its development of WMD in the light of international opposition.[289]

Moreover, intra-alliance discord could become more acute in crises with a WMD-armed aggressor. In this case, the origins of the crisis and the different views about how to deal with an NBC-armed aggressor could be the decisive factors in the Alliance's decision to intervene.[290] Naturally, the reactions of most allies would depend in part on competing economic interests and, domestic opposition and above all, the hesitations stemming from undertaking risky military operations in an NBC environment.[291]

Indeed, even if NATO was prepared to respond to WMD use, a key question about NATO's security guarantees to Turkey is whether all occasions of WMD use against Turkey would generate a NATO reaction. By covertly developing NBC weapons, an aggressor might do much to hide its intentions to use WMD against Turkey. In this case, NATO leaders might have incentives to abandon efforts to confront the NBC-backed challenger in order to avoid risks to their homelands, especially if U.S. and European cities are vulnerable to missile attacks.[292]

For instance, CW may prove to be much less certain in their political effects and thus may not provoke a comprehensive NATO response unless the victim nation suffers mass casualties. Moreover, when used on the battlefield, the effects of chemical weapons may prove localized and short-lived, especially if the targeted forces are protected to a certain degree. Therefore, although the adversary might use chemical weapons extensively in operations against Turkish forces, their use on the battlefield might not automatically evoke the same level of Alliance political interest as the use of nuclear weapons or the large-scale use of biological weapons. Depending in part on the circumstances, Turkey could have a hard time in convincing some of its allies about the massive use of these weapons against Turkish forces on the battlefield. As the use of CW

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289 Michael Rühle, " *View from NATO*: NATO and the Coming Proliferation Threat," *Comparative Strategy*, Vol.13 (July-September 1994), pp. 317-18.

290 Ibid.

291 *NATO Transformed*, p. 266.

292 Brad Roberts and Victor Utgoff, "Coalitions against NBC-Armed Regional Aggressors: How Are They Formed, Maintained, and Led?" *Comparative Strategy*, Vol. 16, 1997, p. 242.

in the late stages of the 1980-88 Iran-Iraq War proved, CW use on the battlefield can occur with little international notice. [293]

As far as biological weapons are concerned, their potential for mass destruction and their potential use in a surreptitious fashion are very clear. If the threat they pose is little noticed, little understood, or widely disputed, their effect would be very difficult to predict. Therefore, a biological weapon's use against Turkey might even not be understood until the devastating effects of the agents begin to surface. There are options for covert use of biological weapons, which would effectively mask the perpetrator and potentially disguise whether an attack has actually happened. As the natural occurrence of many agents suggests, in some cases it may be impossible to distinguish between a natural outbreak of a disease and a covert use of biological agents. The use of biological agents could be tailored to specific local areas or to theatre-wide regions, and their effects could be calibrated from low to high levels of lethality, which would make confirmation of a biological weapons attack even more difficult. In addition, a determined and robust adversary could employ biological weapons against military targets to cause maximum disruption but could deliberately seek to avoid large-scale fatalities. Such attacks could have a significant psychological impact on the populations of the U.S. and European allies while further blurring the criteria for intervention on behalf of Turkey.

Indeed, within the alliance, the political responses to a biological weapons attack against one of the allies seem unpredictable—at least for the moment; and this may make a timely and an effective response even more difficult.[294] Moreover, given the inherent dual-use nature of the equipment and precursor materials used to produce some types of biological weapons and the challenges to detect and to acquire intelligence about the BW programs of the aggressor, conducting preventive or preemptive operations at the last minute would be more difficult.

Currently neither individual member states nor the Alliance as a whole are capable of mounting an effective and integrated defensive response to a BW attack. This decreases the likelihood of sufficient indications and warning and increases the risk of a strategic surprise. Indeed, if non-state actors such as the PKK or the Hisbollah could

[293] Ibid.

effectively employ large-scale BW agents, such threats could constitute Article 5 contingencies, obliging all the Allies to participate in a collective defense of the threatened ally, assuming that the perpetrators could be identified and proven to be acting on behalf of a foreign government. However, non-state actors could create distinct challenges for the alliance, especially for intelligence sharing and coordinated action against NBC terrorism.[295] This could critically prolong the time required for the alliance to respond and would require the Alliance to think beyond traditional planning.

Indeed, in the active defense arena, NATO has made efforts to develop (TMD) to protect its forces and its European territory against attacks by ballistic missiles based in the Middle East or North Africa.[296] However, Europe is safer today than at any time over the past 50 years and thus, for most Europeans, who do not feel threatened by developments outside Europe, European missile defense is virtually unimaginable.[297] Therefore, the European Allies are hardly likely to make missile defense a high priority for themselves. They even generally view missile defense as an unwanted distraction. Thus, few European governments are prepared to invest substantial political efforts or financial resources in territorial missile defense to preserve NATO's freedom of action to conduct military interventions outside Europe.[298]

Even if the Europeans come to accept the need for an allied missile defense in principle, any practical effort to build such a system would be faced with the stubborn realities of declining defense spending and competing defense and non-military priorities.[299] In this context, one might easily ask, would it make sense for NATO European allies to deploy a missile defense system to preserve the credibility of NATO's military intervention at the expense of acquiring the capabilities required for effective EU power projection? Indeed, at a time when many EU countries cannot even find the

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294 Ibid.

295 Brad Roberts and Victor Utgoff, "Coalitions against NBC-Armed Regional Aggressors: How Are They Formed, Maintained, and Led?" *Comparative Strategy*, Vol. 16, 1997, p. 247-48

296 Summer Benson, "Will NATO Deploy European Missile Defenses?" *Comparative Strategy*, Vol. 16, 1997, p. 385.

297 Ibid.

298 Ibid.

299 David Yost, " The NATO Capabilities Gap and the European Union," *Survival*, Vol. 42, No. 4, Winter 2001-01, pp. 97-128.

necessary resources for ESDP, it would be unrealistic to assume that they will find the resources to undertake the more expensive and politically controversial commitment to build a European missile defense system.[300]

Therefore, TMD does not offer a panacea for avoiding political controversy over the Alliance's responsibilities. At least for the foreseeable future, it would be fair to conclude that if NATO is vulnerable to NBC risks and missile attacks, expecting an effective and (more importantly) timely response to NBC-armed aggression against Turkey by the Alliance as a whole may be imprudent, at least in some circumstances.

2. Unilateral U.S. Response?

From Turkey's perspective, the U.S. extended deterrence commitments—particularly U.S. nuclear guarantees—remain a crucial element of NATO's security guarantees to Turkey. First, Turkey's provision of "host nation facilities for United States nuclear capable forces" makes the U.S. security commitments, and thus the transatlantic link, visible both to Ankara and to Turkey's potential enemies.[301] Second, U.S. nuclear forces in Turkey send a deterrent message to Turkey's potential adversaries, thereby convincing them about the genuineness of the US commitments to Turkey.[302]

Indeed, apart from U.S. nuclear guarantees, the United States has many reasonable incentives to honor its commitments to Turkey: the centrality of Article 5 for maintaining NATO and the U.S. leadership role in European security affairs; the importance attached to the U.S.-Turkish strategic relationship in particular, owing in part to Turkey's well-earned reputation as a reliable ally and its geographical position; and above all, the U.S. need to uphold the credibility of its security commitments to sustain its leadership role in other parts of the world. After all, other U.S. allies and security partners would be watching U.S. behavior. These considerations can be deemed important factors that that can be expected to motivate Washington to honor its explicit commitments to Turkey in the case of an armed aggression.

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[300] Richard Sokolsky, " Imagining European Missile Defense," *Survival*, Vol. 43, Autumn 2001, pp. 111-28.

[301] David S. Yost, *The US and Nuclear Deterrence in Europe*, Adelphi Paper no.326 (London: Oxford University Press for the International institute For Strategic Studies, March 1999), pp. 8-9.

[302] Ibid.

However, when the U.S. nuclear guarantees are considered, in thinking through the challenges of potential military confrontations between Turkey and its Middle Eastern neighbors armed with nuclear, biological or chemical (NBC) weapons one must ask whether the threat of U.S. nuclear retaliation would be credible and effective against states that possess chemical and biological weapons. Indeed, the perception of an absence of U.S. vital interests in a regional conflict could raise questions in the minds of both potential aggressors and Turkey about how committed the United States would be in deterring or reversing efforts by an NBC-armed neighbor to exploit its weapons of mass destruction arsenal. In recent years, the United States has shown a tendency not to intervene in conflicts unilaterally. Therefore, the United States is highly unlikely to choose to engage in a war against an NBC-armed adversary alone, and will probably prefer to try to form a coalition of the willing.[303] However, with Europe vulnerable to missile attacks from the Middle East, the United States could face serious challenges in forming and maintaining military coalitions to defeat and reverse an act of regional NBC-backed aggression.[304] The presence of CBW and ballistic missiles in the arsenal of the aggressor would certainly change the dynamics of coalition formation.

If faced with an NBC-backed aggressor, the United States could become even more reluctant to get involved in a risky conflict that could entail massive casualties. The statement of then U.S. Secretary of Defense Dick Cheney in 1991 in the aftermath of the Gulf War gives some clues about the difficulties of engaging the United States in all contingencies:

> I think caution is in order …. This happens to be one of those times when it is justified to … send American forces into combat to achieve important national objectives. But they are very rare. Just because we do it successfully this once, it doesn't mean we should therefore assume that it's something we ought to fall back on automatically as the easy answer to international problems in the future. We have to remember that we don't have a dog in every fight that we don't want to get involved in every single conflict….[305]

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[303] Brad Roberts and Victor Utgoff, "Coalitions against NBC-Armed Regional Aggressors: How Are They Formed, Maintained, and Led?" *Comparative Strategy*, Vol. 16, 1997, p. 233.

[304] Ibid.

[305] Dick Cheney quated in David S. Broder, " With Cheney in Charge," *Washington Post*, 27 February 1991, A25 quoted in NATO *Transformed*, p. 249.

Therefore, the United States might not honor Ankara's expectations of a unilateral U.S. response in all circumstances. Indeed, one could argue that it would be unwise to assume that the only sensible U.S. response would be the use of nuclear weapons. As the world's only superpower, the United States has a wide array of conventional military response options that would enable it to respond effectively to an NBC aggression against Turkey without resorting to nuclear weapons. However, if a nuclear response option was considered, some Americans might argue that retaliating with nuclear weapons in response to a chemical or biological weapons attack against Turkey would be inappropriate.[306] Moreover, some Americans might favor reserving the nuclear retaliation option for more extreme contingencies rather than using nuclear weapons in a limited regional conflict if the number of allied casualties was limited and/or if the effects of WMD use were unclear. In this case, some American opinion leaders would certainly demand caution and restraint from the U.S. government. Therefore, it would be unwise to think that the United States would break the nuclear taboo in retaliation for a small-scale use of chemical or biological weapons against a U.S. ally.

The influence of local ethnic lobbies or arms deals between the United States and Turkey is hardly on the same level with the U.S. security commitments to Turkey. More importantly, such factors could not be compared with the significant strategic interests the United States has in Turkey as a strategic partner. Nonetheless, in some circumstances anti-Turkish ethnic lobbies within the U.S. Congress and U.S. domestic policy circles—notably the Armenian and Greek lobbies—might be effective in limiting and/or constraining U.S. response options to deter or to reverse NBC aggression against Turkey even if the US government was willing to act. It should be recalled that these lobbies have been influential in shaping United States policy toward Turkey, and that they successfully lobbied for Armenian "genocide" bills in some states and constantly managed to block arms sales to Turkey. As a result Washington has put obstacles in the way of Turkey's desire to buy American military equipment and, at times, Ankara has

[306] Scott D. Sagan, " The Commitment Trap: Why the United States Should Not Use Nuclear Threats to Deter Biological and Chemical Weapon Attacks," *International Security,* Vol. 24, No. 4 (Spring 2000), p. 87.

felt itself to be under a de facto arms embargo.[307] In this respect some policy circles in Turkey seriously doubt U.S. credibility—as opposed to ability.

There are, indeed, grounds for the Turkish pessimism about the genuineness of the United States commitments to Turkey. The historical tendencies in the nation toward isolationism, and the resurgence after the Cold War of national debate about the nature and extent of U.S. commitments abroad, raise questions in the minds of Turkish decision makers. Moreover, although the American sensitivity to casualties seems to apply more clearly in operations that are seen as "optional" and more importantly not tied to vital and/or strategic U.S. vital interests, American hypersensitivity to casualties raises questions about whether it would be possible to keep the United States engaged in the war on behalf of Turkey if an aggressor could inflict large-scale casualties on U.S. forces, particularly with weapons of mass destruction.[308] Furthermore, although Somalia, Bosnia, and Kosovo were all cases in which U.S. vital and/or strategic interests were not (and are not) engaged, the United States government's decisions to disengage from conflicts as casualties began to mount—as was the case in Somalia—fuel the Turkish perception that it would be difficult to engage the United States in some of Turkey's regional contingencies in which large-scale CBW use on the battlefield is likely. At a minimum, the possibility of U.S. noninvolvement in regional conflicts in which the adversary might pursue asymmetrical strategies suggests that Turkey should not be totally dependent on the U.S. extended deterrence commitments and should take the necessary NBC defensive measures and acquire the required capabilities to defend its forces, population and territory against a potential NBC attack. Indeed, from the adversaries' perspective, the U.S. withdrawal from Lebanon in 1983 might, in fact, have encouraged Saddam Hussein as well as Iranian and Syrian leaders about how to take advantage of this U.S. sensitivity in any future confrontation in the region.

If an aggressor armed with WMD was convinced that the United States would not use its nuclear arsenal in response to WMD aggression against one of its allies due to strong pressure at home and abroad, then, it might not be deterred by U.S. nuclear

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[307] Zalmay Khalilzad, Ian O. lesser and F. Stephan Larrabee, *The Future Of Turkish-Western Relations*, p. 80.

[308] Brad Roberts and Victor Utgoff, "Coalitions against NBC-Armed Regional Aggressors," pp. 247-48.

threats.[309] Moreover, even if the United States threatened to retaliate with nuclear weapons in response to a chemical or biological attack (to maintain its international and domestic reputation for honoring commitments), the U.S. efforts to deter an NBC-armed aggression against Turkey might still fail. If the adversary was convinced about the genuineness of U.S. determination to protect Turkey by using nuclear weapons against WMD aggression, the perceived risk of US nuclear retaliation might even increase the likelihood of accidental or unauthorized use of chemical and/or biological weapons against Turkey in response to a false warning of an imminent US nuclear attack.[310] It should be recalled from chapters II and III that both Iran and Iraq have predelegation procedures and could release the authority to use WMD in response to a nuclear attack risk to the battlefield commanders as a part of their command and control structures. Moreover, Iraqi Unit 224 missile units and Iranian IRGC units retain high-level of autonomy within both armed forces of Iran and Iraq, thereby increasing the risk of accidental or unauthorized use of NBC weapons against their neighbors such as Turkey and Israel.

Another problem with U.S. nuclear threats as deterrents to NBC use is that employing nuclear weapons would be deeply controversial. This could constrain the US from carrying out its threats (i.e., nuclear retaliation) due to the international pressure of defying an international "norm." The U.S. government has made commitments, most recently before the 1995 Nuclear Non-Proliferation Treaty (NPT) extension conference, that it will neither use nor threaten to use nuclear weapons against any nonnuclear member state of the NPT.[311] Fearing that such a use of nuclear weapons could undercut

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309 Ibid, p. 247.

310 Scott D. Sagan, " The Commitment Trap," p. 86.

311 There are two declared exceptions to this U.S. government commitment. In 1995, Secretary of State Warren Christopher, on behalf of the U.S. government stated that the United States " will not use nuclear weapons against any non-nuclear-weapons states party to the treaty on the Non-proliferation of Nuclear Weapons except in the case of an invasion or any other attack on the United States, its territories, its armed forces or other troops, or on a state toward which it has a security commitment carried out or sustained by such a non-nuclear-weapons state in association or alliance with a nuclear-weapons state. "Department of State, statement of Secretary of State Warren Christopher, April 5, 1995. See, George Bunn, " The Legal Status of U.S. Negative Security Assurances to Non-nuclear States," *Nonproliferation Review*, Vol. 4, No. 3 (Spring-Summer 1997), pp. 1-7.
The other declared exception concerns use the use of nuclear weapons against the use of CW or BW. In December 1997, Robert Bell, the senior director for defense policy at the US National Security Council (NSC) stated that, "If any nation uses weapons of mass destruction against the United States, it may

these global norms, legitimize nuclear weapons threats by other nuclear powers, and encourage non-nuclear states to develop nuclear arms to deter NBC-backed aggressors, the U.S. may be reluctant to back away from such promises.[312] Moreover, if the U.S. used nuclear weapons, fundamental questions would inevitably be raised in neighboring states and would get harsh reactions from major powers, particularly from Russia, China and France. Indeed, as Lawrence Freedman has observed, there are many difficulties for a Western nuclear response against chemical or biological weapons use:

> It is hard to see how Western countries can make explicit nuclear threats to deter chemical or biological weapons use. Apart from legal obligations not to use nuclear weapons against non-nuclear states, it would be difficult to make retaliation automatic, given that such an attack might turn out to be poorly targeted and to have limited results.[313]

Finally, the reaction of the American public and the international reaction to the use of nuclear weapons by the United States would probably be scenario-dependent. However, given the long nuclear taboo of the Cold War era, nuclear weapons use in retaliation for chemical or biological weapons use seems likely to provoke a great deal of public and international reaction and might be regarded as disproportionate.[314] Thus, the prospects for a U.S. unilateral response might be highly limited and dependent on the circumstances of the case.

D. IMPLICATIONS FOR TURKISH SECURITY

Among the NATO members, Turkey is one of the states most concerned with the implications of WMD proliferation since Ankara has disputes that could lead to serious conflicts with several potential proliferant states, including Iran, Iraq and Syria. One should remember that Turkey's relations with all three neighbors encompass flashpoints and could lead to a direct NATO involvement.[315] However, as Ian O. Lesser has

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'forfeit' its protection from US nuclear attack under the 1995 pledge." See Robert Bell quoted in R. Jeffrey Smith, "Clinton Directive Changes Strategy On Nuclear Arms," *Washington Post*, 7 December 1997,p. A1, also quoted in David S. Yost, *The US and Nuclear Deterrence in Europe*, Adelphi Paper no.326 (London: Oxford University Press for the International institute For Strategic Studies, March 1999), p. 30.

312 Scott D. Sagan, " The Commitment Trap," p. 86.

313 Lawrence Freedman, *The Revolution in Strategic Affairs,* Adelphi Paper 318 (London: Western European Union International Institute for Startegic Studies, 1998), p. 47.

314 Brad Roberts and Victor Utgoff, "Coalitions against NBC-Armed Regional Aggressors," p. 242.

315 *NATO Looks South*, p. 26.

observed, obstacles to an effective NATO response to NBC-armed aggression against Turkey could arise in some circumstances:

> Open conflict, or even a protracted period of brinkmanship with Syria, could cause Ankara to seek NATO backing on the basis that terrorists should not be allowed sanctuary, and the territory of a NATO member is threatened by Syrian behavior. Given the controversy over the PKK and Kurdish issues in Europe, many allies are likely to balk at the prospect of support for Ankara. NATO's failure to provide a determined response would strongly reinforce existing Turkish concerns about "selective solidarity."[316]

However, all these obstacles to an effective NATO or unilateral U.S. response could be perceived as possible preconditions for the dissolution of the Alliance's resolve and solidarity and might send the wrong message to Turkey's potential adversaries. Assuming that NATO or the U.S. might not support Ankara, the aggressors might consider using these weapons whenever they deem it necessary. NATO's failure to provide a determined response to NBC-backed aggression against Turkey could further enhance the adversary's objective of using these weapons as a political tool to prevent a NATO or U.S. intervention on behalf of Turkey under the Article 5 provisions. Therefore, given the numerous obstacles to an effective NATO response, relying on NATO and/or U.S. security guarantees to deter WMD aggression against Turkey may provide little relief for Turkish security planners. As Jack Snyder concluded:

> A combination of factors including a reduced US presence in and commitment to Europe's security, lack of Western resolve in addressing the Balkan crises, and an increasingly visible and aggressive Russian military presence in the Caucasus region, suggest to Turkey that its iron-clad links to NATO and the West are more fragile than they have been in several decades.[317]

For example, some Turkish diplomats and foreign policy officials have asked in 1996, "Why should Turkey contribute to the defense of Europe if there is no guarantee that WEU would come to the defense of Turkey?"[318] As one former Turkish foreign

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316 Ibid, p. 38.

317 Jack Snyder, "Arms and Security in the Mediterranean Region, " in R. Aliboni, G. Joffee and T. Niblock (eds.) *Security Challenges in the Mediterranean Region* (London: Frank Cass, 1996).

318 Kamran Inan, former Minister of Foreign Affairs, quoted in Kemal Kirisci, " Post Cold-War Turkish Security and the Middle East," p. 9.

minister said, "It is unacceptable that Turkey is treated as a European country only when it comes to ensuring Europe's security and defense but not the other way around."[319] Such statements reflect Turkish concerns about the credibility of NATO's security guarantees to Turkey. NATO's security guarantees, as well as the U.S. extended deterrence commitments to Turkey, are essential and indivisible elements of Turkey's security. However, these elements might not be sufficient to deter the use of WMD against Turkey.

[319] Mumtaz Soysal, former Minister of Foreign Affairs, quoted in Kemal Kirisci, " Post Cold-War Turkish Security and the Middle East," p. 9.

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VI. TURKEY'S DETERRENT

A. INTRODUCTION

For Turkey, WMD proliferation is a relatively new concern. Despite Turkey's growing exposure to proliferation risks, Turkey was initially slow to respond to the acquisition of missiles and weapons of mass destruction by its Middle Eastern neighbors.[320] Even in the early 1990s, Turkey felt protected against a potential Iranian or Iraqi attack by the U.S./NATO umbrella.[321] However, for example, during the Kuwait crises, U.S. and NATO anti-missile batteries had to be deployed in southeastern Turkey to defend against potential Iraqi missile attacks. When Saddam Hussein threatened to attack Turkey if it continued to allow U.S. and British fighter planes to use Operation Provide comfort (OPC) facilities at the Incirlik airbase in early 1999, the United States deployed a first generation Patriot battery composed of eight launchers at the Incirlik base in southern Turkey to bolster air-defenses against a possible attack by Iraq.[322] At the request of the Turkish government, elements of the Patriot missiles were deployed from Germany as a prudent precaution in the face of Saddam Hussein's threats to Turkey for hosting coalition forces.

The absence of a Turkish anti-missile capability makes Turkey vulnerable to Syria, Iraq and Iran, which are amply equipped with WMD. Turkey is paying growing attention to this threat, and countering it is an important part of Israel-Turkish military cooperation. Indeed, Turkish decision makers are concerned that U.S. efforts of preventing proliferation by pressuring arms exporters—namely Russia, China, and North Korea—not to supply these neighbors of Turkey with advanced missile technologies, in general has not been terribly successful and leaves Turkey vulnerable to potential attacks or intimidation from Syria and Iran.[323]

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320 Ian O. Lesser and Ashley J. Tellis, *Strategic Exposure*, p. 21.

321 Efraim Inbar, "The Strategic Glue in the Israeli-Turkish Alignment," p. 118.

322 Todd Fleming, "Patriots to Deploy Turkey," *Air Force News*, 25 January 1999.
Available online: http://www.fas.org/spp/starwars/program/news99/n1990125_990112.htm.

323 Kemal Kirisci, "U.S.-Turkish Relations: New Uncertainties in a Renewed Partnership," in Barry Rubin and Kemal Kirisci, eds., *Turkey in World Politics: An Emerging Regional Power* (Boulder: Lynne Rienner, 2001), p. 95.

In recent years, Turkey's threat perceptions have heightened, particularly as a result of Tehran's long-range Shabab missile program and Baghdad's clandestine efforts to develop weapons of mass destruction. In contrast, Turkey's trust in NATO and/or the U.S. extended deterrence commitments has diminished. After ignoring the spread of ballistic missiles in the region, Turkey has embarked on efforts to enhance its deterrent capabilities against its neighbors.[324] In this context, Turkey has redefined its military strategy in terms of deterrence, superior mobility, forward abilities, endurance and the capability of rapid intervention in crises.[325]

B. TURKEY'S DETERRENT POSTURE

1. Active Defense Capabilities

Turkey's southeastern neighbors, particularly Iran, view Turkey as a powerful neighbor with a large military machine, strong security and military ties with the West and a substantial Turkish military presence on all three country's borders.[326] Turkey's membership in NATO and its cooperation with Israel also raise the most difficulties in the military calculations of its three southeastern neighbors.

In this context, the Turkish defense strategy is based on deterrence, including its NATO membership and air force strike capability.[327] Moreover, Turkey has a credible ability to defend its territory should deterrence fail. As can be seen in Table 3, the military balance in the eastern Mediterranean and the Middle East is in favor of Turkey with a large, strong and mobile army and a large part of its budget (about 4.3 to 4.8 percent of its GNP) dedicated to defense expenditures. Moreover, with a growing capacity for mobile operations, combat experience and with years of cross-border campaigns in northern Iraq, Turkey's Armed Forces are superior to the armed forces of its Middle Eastern neighbors in many aspects.[328] The most telling difference, however, is Turkey's air superiority. Turkey's armed forces' experience both on the ground and in the air in northern Iraq over the past decade has immensely increased confidence and

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[324] Kemal Kirisci, "The Future of Turkish Policy toward the Middle East," p. 108.

[325] "White Paper 2000-Part IV," *Turkish Ministry of Defense*, 2000. Available online: www.msb.gov.tr.

[326] Daniel Byman, Shahram Chubin, Anoushiravan and Jerold Green, *Iran's Security Policy in the Post-Revolutionary Era* (Santa Monica, Calif.: RAND, 2001), p. 67.

[327] Kemal Kirisci, "U.S.-Turkish Relations: New Uncertainties in a Renewed Partnership," p. 95.

[328] Alan Makovsky and Michael Eisenstadt, "Turkish-Syrian Relations: A Crisis Delayed?" *Policy Watch*

personnel morale. Most of the young officers have actual combat experience and guerilla fighting skills as a result of the 14 year-old struggle against the PKK terrorists. This conventional military superiority over Iran, Iraq and Syria is reinforced by Turkey's military cooperation with Israel, which offers a deterrence dividend for Ankara. A policy of modernizing and upgrading Turkey's conventional military capabilities since 1996 at a cost of $150 billion over a period of 25 years has been another important factor.

	Armed Forces Strength	*Armoured Vehicles*	*Combat Aircraft*	*Major Naval Vessels*	*Ballistic Missiles*	*Nuclear Weapons*
Iraq (1)	350,000 (estimated)	n/a	231	3	n/a	n/a
Iran	500,000	2,725	447	29	450+	n/a
Greece	166,100	4,317	342	47	None	None
Israel	177,500	9,548+	583	18	360+	n/a
Syria	425,000	5,810+	511	18	300+	None
Turkey	516,600	8,650+	519	55	72(2)	None

Notes:
1. Iraqi figures are estimates.
2. In delivery.

Table 3: Regional Military Balance[329]

During the Persian Gulf War, Turkey faced the stark reality that it lacked defenses against chemical, biological weapons and tactical ballistic missiles (TBMs). For the time being, Turkey still lacks a missile defense system that could protect its territory and population centers. In the event of an NBC-armed aggression against Turkey, Ankara has based its strategy on detecting and retaliating against WMD production facilities and

 # 345, Washington Institute for Near East Policy, 14 October 1998.

329 "Regional Military Balance-Eastern Mediterranean–10," *Jane's Sentinel Security Assessment*, 28 June 2001. Available online: www.janesonline.com.

missile launching sites (including mobile launchers) in neighboring countries.[330] Therefore, it can be concluded that, presently Turkey's deterrence against WMD threats originates from its superior conventional forces and its capability to occupy large areas with highly mobile and strong ground forces. Until the early 1990s, Turkey's strategic depth—approximately 780.580km²—was also an important factor against a potential WMD or missile attack by its neighbors. However, with the increased range of Iranian (Shabab-3, 1,300 km) and Syrian (Scud D, 600 km), and (despite UN sanctions) reported Iraqi possession of Scud missiles that have ranges exceeding 600 km, Turkey's advantage over strategic depth has diminished considerably.[331]

In the air, Turkey has a significant deterrent capability. In fact, possibly because of the increasing Turkish exposure to WMD and missile threats from its neighbors, the airbalance with regard to its neighbors has recently become central to strategy of the Turkish defense planners. Indeed, Turkey has made airforce modernization a priority, and some observers believe air power has been the leading vehicle for Turkish assertiveness in the region. After Israel, Turkey has the second largest air power in the Middle East with a large fleet of Turkish manufactured F-16s in its inventory and has the technical capacity to improve its airforce without relying on any outside supplier. Turkey has roughly 240 F-16s as well as upgraded F-4s and highly skilled pilots who regularly fly actual combat missions in the mountainous eastern Turkey and northern Iraq. In the case of a WMD aggression, Turkey's fleet of long-range F-16 and modernized F-4 and F-5 fighters could be used in a pre-emptive strike to neutralize missile facilities as far away as Iran, Iraq and Syria. It should be recalled that a precedent for such action has already been established in the region following the Israeli attack on an Iraqi nuclear reactor in 1981. In this regard, Turkish pilots were reported to have trained in the Negev Desert for missions to destroy the missile sites, a technique the Israelis had developed with devastating effect against the Syrians in Lebanon's Bekaa Valley in 1982.[332] Moreover, to have the ability to penetrate enemy air defenses and conduct surprise counterforce

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330 Kemal Kirisci, " Post Cold-War Turkish Security and the Middle East," p. 10.

331 Linda D. Kozaryan, "Patriots to Deploy Turkey," *Defenselink News*, 19 January 1999. Available online: http://www.defenselink.mil/news/Jan1999/n01191999_9901195.html .

332 Ed Blanche, "Israel and Turkey Look to Extend Their Influence into Central Asia," *Jane's Intelligence Review*, 01 August 2001, p. 3. Available online: www.janesonline.com.

operations, Turkish pilots have also undergone electronic warfare training in Israel. These bilateral flights within each other's (Israel and Turkey) airspace also act as a deterrent against Syria, Iraq and Iran.

Despite Turkish strategic planners' frequently pronounced doubts about their credibility and sufficiency against WMD threats, Turkey's NATO alliance and US nuclear guarantees constitute a credible deterrent against Turkey's potential aggressors along its southern borders. Turkey's is an ally of the United States and it has been a NATO member for fifty years. The Turkish military's Incirlik airbase, which the U.S. uses to enforce of the no-fly zone over Northern Iraq, could be considered a potential launching pad for U.S and NATO military action in the case of aggression against Turkey. Moreover, the strategic importance of Turkey to the United States would be enough to deter any foolish military action by Iraq, Iran or Syria against Turkey. Thus, Turkey's Western alliances and NATO/or U.S. forces in Turkey is regarded as a powerful deterrent facing the Iranian, Iraqi and Syrian regimes and illustrates the value of Turkey's membership to NATO, which bolsters Turkey's deterrence.

The Turkish-Israeli alliance that materialized in 1996 is also another contributing factor enhancing Turkey's deterrence. The cooperation of the two countries, which have the most powerful military forces in the region, has altered the Middle East's balance of power significantly and enhanced both states' regional status and deterrent capabilities. Although both governments state that their relationship is not intended to threaten any other states, it is certainly clear that any regional government or potential aggressor would be forced to think twice before challenging such a formidable partnership. As Israel's former defense minister, Yitzak Mordechai, clearly stated in 1998, "When we lock hands we form a powerful fist … Our relationship is a strategic one."[333]

With a highly modernized and mobile conventional military capabilities and a strong regional alliance with Israel, Turkey's deterrent posture with regard to its three neighbors has been strengthened considerably. Recently, convinced about its military superiority Turkey has been more assertive and willing to use force if needed while pursuing its strategic interests in the Middle East. In this context, recent events suggest

[333] Ed Blanche, "Israel and Turkey Look to Extend Their Influence into Central Asia," *Jane's Intelligence*

that Turkey's conventional military capabilities, and its Western and regional alliances constitute a credible deterrent against its southeastern neighbors as well as against Greece and Cyprus. In this regard, Turkey's military stance on Syria's border in 1998 was a case in point. Turkey forced Syria, pinioned between Turkey and Israel, to cease supporting the PKK separatists.This eventually led to PKK leader Abdullah Ocalan's capture in Kenya in February 1999. Syria also lost its leverage with Turkey in its dispute over the Euphrates, while Ankara was able to tighten its control over the supply of water to both Syria and Iraq. [334]

The second illustration was is the S-300 crises of December 1998 between Turkey, Cyprus and Greece. When the Greek Cypriots moved to deploy long-range S-300 anti-aircraft missiles in the divided island, the threat of military action by Turkey stopped them cold.[335] The Greek Cypriots abandoned their plans to deploy the sophisticated Russian air defense systems on the island, fearing a strong Turkish response—most likely a military strike—regardless of the potential repercussions. The presence in northern Cyprus of 35,000 mechanized and well-trained troops capable of invading the whole of Cyrus in a short time was also a contributing factor in bolstering Turkey's strategic deterrent.[336] These two incidents suggest that, at least for the moment, Turkey's deterrent posture works effectively against any potential aggressor who might dare to confront Turkey.

2. Passive Defense Capabilities

For an effective defensive response to an NBC attack, maintaining a robust passive defense capability is essential. For example, deploying better and adequate protective suits, masks and protective gears, as well as detectors for both chemical and biological agents is very critical for denying the enemy benefits of using CBW against Turkish forces. Providing an accurate and timely warning so that effective measures can be instituted into peacetime planning is also very critical for NBC defense. Above all, warning and reporting is essential for battlefield commanders to be fully informed about

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Review, 1 August 2001. Available online: www.janesonline.com.

[334] Ibid.

[335] Ibid.

[336] Mustafa Kibaroglu, "Turkey's Deterrent; Turkish Troops in Cyprus," *Bulletin of the Atomic Scientists*, Vol. 55, No. 2, 1 March 1999, p. 3.

the potential risks they might face on the battlefield and to be able to carry out their tasks by taking the necessary measures to protect their deployed forces. In addition, an advanced medical response, an integrated and well-organized consequence management and an intensive exercise and training based on realistic NBC-threat scenarios on individual, unit and joint levels constitute the building blocks of a robust passive defense capability.

Within the Turkish Armed Forces force structure, there is an NBC-school in Adapazari. There is an NBC-company within the force structure of every Corps level units. However, most of the information, concepts, doctrine and training programs and equipments used in passive defense area are mostly WW II concepts and methods. The Army's NBC equipments are very old and mostly out of order. Most of the gas masks, protective suits and gears are non-usable because they effective use date have expired long ago. Therefore, most of the protective NBC equipment in the military storage facilities has no protective value and is no remedy for an effective passive defense. There is a gas mask factory in Ankara, producing protective masks and suits for Turkish Army. However, the level of production is insufficient to equip all military personnel, not to mention the civilians. NBC defense training is given at the individual level as a part of basic military training to the conscripts at the military basic training centers. However, basic NBC training is mostly conducted theoretically and the personnel mostly do not have any practical or actual expertise on NBC defense. Every soldier has a gas mask and every company has a radiacmeter for CW detection. However, these are either mostly out of order or usually expired. Very few protective shelters are present and most protective suits have already lost their protective features. Although substantial progress has been achieved in some areas of passive defense, there are huge capability shortfalls in NBC equipment, detection, decontamination, doctrine and training that must be dealt with urgently.

C. FUTURE CAPABILITIES AND PROCUREMENT PLANS

1. Air Force

Recently, the Turkish air force has undergone great advancements. In this regard, some $45 billion has been earmarked for the air force under Turkey's 25-year

modernization program.[337] Turkey's procurement plans include electronic warfare systems, command control communication and intelligence (C^3I) systems, air-launched precision guided weapons and air defense missiles. The air force has been increasing its holding of F-16 fighters and the co-production of a first batch of 240 aircraft has been completed in two phases of 160 and 80 aircraft. The airforce is also planning to procure 145 attack helicopters with an initial order of 50 from Bell Helicopter Textron King Cobra AH-1Z Company to fulfill Turkey's attack helicopter requirements. The purchase of attack helicopters might be aimed at hunting Syrian Scud missile launchers in northern and central Syria and the mobile missile launchers in Iraq. Meanwhile, under the "Vision-2005" document, the Turkish Armed Forces plan to add the 4th generation Joint Strike Fighter (JSF) to its inventory. This will replace its current fleet of F-16C/D multimission aircraft by the end of 2015. Moreover, Turkey is participating in the engineering and manufacturing development (EMD) stage of the program at a cost of $1 billion.[338] The Turkish air force also expressed interest in acquiring up to 40 US-made F-15E Strike Eagle fighters. A five-year modernization agreement with Israeli Aircraft Industries to upgrade Turkey's 54 F-4E aircraft is also among the procurement plans. Israeli air force has already delivered eight of 54 modernized F-4E Phantoms, elevating them to the Phantom 2000 standard.[339] These aircraft are configured to carry Popeye precision-guided stand-off missiles.

In order to boost the capabilities of the air force, the Turkish government decided to make a major acquisition of tanker aircraft that would increase the flight range of the Turkish air force (TUAF)'s F-16 and F-4 fighter aircrafts. In this regard, it purchased seven U.S. KC-135r tanker aircraft in late 1997 and deliveries were completed in 1998. Meanwhile the air force also leases two U.S. KC-135 tanker aircraft. The purchase of tanker aircrafts to increase the flight range of Turkish fighter planes would allow the Turkish air force to fly deep inside the enemy territory, especially on missions for detecting and identifying WMD production facilities and mobile missile launchers, as

337 "Armed Forces, Turkey," *Jane's Document View*, Jane's Sentinel Security Assessment-Eastern Mediterranean-10, 9 October 2001, p. 9. Available online: www.janesonline.com.
338 Lale Sariibrahimoglu, "Air Force Eyes Costly Space Projects," *Jane's Defense Weekly*, 28 February 2001.
339 Ibid.

well as to pursue retaliatory strikes and conduct counterforce operations beyond enemy territory. Such a capability would also allow the Turkish air force to be more aggressive and to take greater risks when attacking targets in northern Syria and Iraq.

In April of 1996, the Turkish military announced a 30-year $150 billion co-production deal with foreign partners. The program includes plans for the acquisition of 640 combat aircraft, 750 helicopters and the purchase of four airborne early warning (AEW) aircraft for delivery by 2003. The building of 24 additional F-16 fighters and modernizing and upgrading of seven tanker aircraft, donated by the USA are also among the procurement plans. In November of 1996, Turkey revealed plans to buy Popeye II missiles from Israel for its modernized F-4 fighters and to co-produce another 120. In September 1997 Turkey reportedly considered buying Israel's Rafael manufactured Phyton-4 air-to-air missiles for the air force. It was also reported that the Turkish air force was proposing to acquire stand-off munitions and jammers, along with high-speed anti-radiation (HARM) missiles for the air force's F-16 Block 50 aircraft.

Presently, Turkey's punitive strategy with regard to WMD and ballistic missile threats solely relies on its superior air force, particularly on F-16s, F-4s and other capable aircraft, which have the capability to launch Popeye II precision guided missiles to targets as far as 150 miles in range.

2. Intelligence and Early Warning

The Turkish Armed Forces are also improving their assault, defense reconnaissance/surveillance and early warning capabilities.[340] The TUAF embarked on a project to acquire mobile radars and aerial warning and control aircraft and to negotiate the possible purchase of U.S. early warning planes (AWACS).[341] The objective is to eliminate deficiencies in low-altitude radar coverage against enemy missile and air attacks. In January 2000, the minister of national defense, Sabahattin Cakmakoglu, stated that Turkey would purchase four AWACS planes. In December, it was announced that Turkey was to begin negotiations with a Boeing-led team to meet a requirement for six 737 airborne early warning and control (AEW & C) aircraft, with an option for a seventh,

[340] Lale Sariibrahimoglu, "Air Force Eyes Costly Space Projects," 28 February 2001.
[341] Ibid,p.10.

plus ground support elements.[342] The Defense Industries Undersecretariat (SSM) has asked Boeing to transfer the software source codes and other key modification and integration technologies associated with the sale of six to eight Boeing 737 airborne early warning and control aircraft (AEW&C).[343]

The Turkish Armed Forces have also followed a three–phased approach for acquiring the necessary capabilities to improve their intelligence gathering and early warning capabilities, especially in the face of increased missile risks to Turkey's territory and forces. The first phase is Turkey's plan for advanced reconnaissance that began last year (2000) when it ordered high-altitude long-range oblique photography (LOROP) systems from Israel for use on its 42 RF-4 Phantom reconnaissance aircrafts.[344]

The second phase is a joint requirement for long- and short-range unmanned air vehicles (UAVs) which will be procured by local production with foreign partners: four long- and short-range UAV for the army, three long-range UAVs for the navy and two long-range UAVs for the air force.[345] The $350 million program involves the production of a total of 23 systems of long-range (300km) and eight medium range (200-300 km) which will enable Turkey to gather intelligence and intelligence photographs, particularly of WMD production facilities and mobile missile launchers that might need to be destroyed deep within the Iranian, Iraqi and Syrian territory.[346] In this regard, recently Turkey's military has decided to accelerate the procurement of unmanned air vehicles to bolster preparations for any regional conflict. It was reported that the military would buy up to six UAV systems for the air force to bolster its reconnaissance capability within the next three months.[347]

The third phase is a satellite reconnaissance capability. In order to fulfill this requirement, Turkey has made a $240 million deal with France's Alcatel, and a Turkish

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[342] Lale Saribrahimoglu, "Turkey Selects Boeing-led Team for AEW&C," *Jane's Defense Weekly*, O6 December 2000.

[343] Lale Sariibrahimoglu, "Air Force Eyes Costly Space Projects," 28 February 2001.

[344] Ibid.

[345] Ibid.

[346] "Armed Forces/Turkey," Jane's Sentinel Security Assessment-Eastern Mediterranean-10

[347] "Turkey Accelerates UAV Project," Middle East Newsline, Vol. 3, No. 408, 26 October 2001. Available online: www.menewsline.com

spy satellite will be sent into space by the year 2005.[348] As a result, with a capability to launch unmanned reconnaissance flights along its border with Syria, Iraq and Iran by using long-range cameras and electronic sensors that see deep into all three neighboring countries and to monitor troop and missile launcher deployments from space, Turkey would be able to derive real-time data about a potential WMD or ballistic missile attack on Turkish territory.

3. Theatre Missile Defenses

Turkey has considered acquiring a theatre missile defense (TMD). This is partly in response to Iranian moves to develop the 1,300 km range Shabab-3 medium-range ballistic missile, which is capable of reaching most parts of Turkey. Several vital military facilities and some Turkish major cities including Ankara are practically defenseless against missile threats from its southeastern neighbors. For example, it was reported that the Turkish armed forces favored a multi-tier ballistic missile defense (BMD) concept to counter the ballistic missile threat.[349] According to this concept, an enemy missile is intercepted high in the atmosphere by a long-range missile. If this intercept is unsuccessful, there will be a second chance to intercept the missile by a shorter-range system as the missile descends toward its target. Ankara officially adopted a two-tier TMD concept. It will soon start discussions on choosing the specific systems to acquire. The U.S made Patriot systems and U.S.-Israeli Arrow are the likeliest options for anti-aircraft and anti-missile defenses for Turkey.

In mid-1999, Turkish officials stated that deploying a missile defense system is a top defense priority and announced procurement plans for medium and long-range air-defense systems.[350] In a related move, Ankara expressed interest in buying Israel's Arrow-2 anti-tactical ballistic missile (ATBM) systems. [351] The Arrow missile defense plan involves a layered defense, a possible boost-phase interceptor, new battle management systems and sensor and also close cooperation with the U.S.[352] In this

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348 Ibid.

349 "Armed Forces/Turkey," Jane's Sentinel Security Assessment-Eastern Mediterranean-10, p. 10.

350 Ibid.

351 Burak Ege Erdil and Umit Erginsoy, "Turkey Seeks Permission for Arrow Buy," *Defense News*, 20 July 2001. Available online: www. Defensenews.com.

352 Anthony H. Cordesman, *Weapons of Mass Destruction in the Middle East*, Center For Strategic and

regard, in January 2000, Turkey participated in a simulated-theatre-missile defense exercise under the auspices of the Turkish bilateral working group on theatre-missile defense.[353] Since then, Ankara established a simulation system in Turkey to test theatre-missile defence concepts. Indeed, the Arrow project is appealing not only because of its advanced stage of development (the only one of its kind to become operational by the year 2000) and its high level technology, but also because of U.S. involvement.[354] Israel's Arrow system was successfully tested again in August 2001 and can intercept the most advanced ballistic missile developed in the Middle East, including Iran's Shabab-3 and Syria's Scud-D missiles, which have ranges of 1,300 km and 700 km subsequently.[355]

The U.S. Patriot Advanced Capability-3 (PAC-3) Patriot surface-to-air (SAM) system is also seen as the other most likely candidate. The U.S. PAC-3 system was successfully flight-tested in October 2001 and is expected to be ready for an operational test phase quite soon.[356] The tests have proven successful and the PAC-3 missile system was suggested to be fully capable of defeating the entire WMD threat to Turkey, such as tactical ballistic missile, cruise missiles and aircraft and the United States is expected to begin full-rate production in September 2002.[357] Within a NATO Theatre Missile Defense (TMD) context, Turkey has also expressed interest in the Medium Extended Air Defence System (MEADS) being developed on a trilateral basis by the US, Italy and Germany. The MEADs is planned to be fielded by the year 2005. Perceiving vulnerability to potential missile attacks from its southeastern neighbors, the Turkish Defense Ministry also plans to bolster the nation's airspace. The ministry's plans will procure of 148 low altitude anti-aircraft batteries and a network of batteries to protect

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International Studies, (Washington D.C.: CSIS, July 2001), pp. 31-35.
Available Online: http://www.csis.org/burke/mb/me_wmd_regionaltrends.pdf.

353 "Armed Force, Turkey," *Jane's Sentinel Security Assessment-Eastern Mediterranean-10*.

354 Efraim Inbar, "The Strategic Glue in the Israeli-Turkish Alignment," p. 135.

355 "Israel's Arrow Can Now Intercept Shabab-3," *Middle East Newsline*, 28 August 2001,Vol. 3, No. 339, 28 august 2001. Available online: www.menewsline.com

356 Kerry Gildea, "PAC-3 Scores Hit, Transitions to Operational Test Phase," *Defense Daily*, 23 October 2001. Available online: http:// ebird.dtic.mil/Oct2001/e20011023pac.htm.

357 Ibid.

against low-flying missiles.[358] The batteries will be composed of Turkish-produced Harpoon and Reckle systems that will protect Turkey's airports and military bases.[359]

Ankara also supports the U.S. plans to deploy a national missile defense system (NMD). Turkey's proximity to states of proliferation concern encourages support for the project. Therefore, Turkey is much more sympathetic to President Bush's missile defense plan than most European NATO allies. Turkey considers itself a potential host to NMD interceptors, probably including a defense base in Turkey.[360] The U.S. plan opts for a boost-phase missile defense system, which would attack Iraqi or Iranian ballistic missiles shortly after launch. According to Phil Gordon, the U.S. National Security Council's director for southern Europe, " It would be necessary to base interceptor missiles near those countries' borders (Iran and Iraq) in southeastern Turkey. Even if a boost-phase system is not selected, deployment of early warning stations to Turkish territory is likely."[361]

Turkey is also embarking on the design and production of its own short range-range missiles, and could move to develop longer-range systems.[362] Under a 10-year program, Turkey and the UK will co-produce 841 Rapier Mk 2B missiles for the Turkish Land Forces and the Turkish Air Force (TUAF) in Turkey at the Turkish facilities near Ankara.[363] It should be also noted that 120 Army Tactical Missile System (ATACMS) missiles were transferred to Turkey in December 1995.[364] With a range of 165 kilometers, ATACMS is effective against high-value targets deep behind the battlefield, including deployed ballistic missile launch sites, surface-to-air missiles and command and control units.[365] These missiles can be launched from the Multiple Launch Rocket

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358 "Turkey Feels Vulnerable to Missile Attack," *Middle East Newsline*, Vol. 3, No. 386, 10 October 2001. Available online: www.menewsline.com

359 Ibid.

360 Burak Ege Bekdil and Unit Erginsoy, "Turkey Sees Shelter in NMD," *Defense News*, Vol. 16, No. 22. 30 May 2001, p. 1. Available online: www.defensenews.com.

361 Ibid, p. 4.

362 Zalmay Khalilzad, Ian O. lesser and F. Stephan Larrabee, *The Future of Turkish-Western Relations*, p. 88.

363 Lale Sariibrahimoglu, "Air Force Eyes Costly Space Projects," *Jane's Defense Weekly*, 28 February 2001.

364 "Sale of Army Tactical Missile System to Turkey," *Congressional Record*, 11 December 1995, p.1. Available online: http://www.fas.org/spp/starwars/congress/1995/s951211a.htm.

365 Ibid.

System, of which Turkey already possesses twelve and offers at least some protection against Iran, Iraq and Syria. Turkey's efforts to acquire tactical missiles suggest that its incentives to develop its own retaliatory capabilities as opposed to defensive efforts is increasing, as Turkish cities become more and more vulnerable to missiles launched from areas near Turkey.

D. IMPLICATIONS FOR TURKISH SECURITY

Turkey's conventional military capabilities put Turkey in a superior position vis-à-vis its southeastern neighbors. In the case of an armed aggression, Turkey's procurement and military modernization programs suggest that Turkey plans to strike the WMD production facilities and missiles launching sites in the enemy territory with its highly capable air power. At the same time, by penetrating behind the enemy lines and by destroying the enemy missile launchers and other potential delivery means with its special forces, Turkey plans to neutralize enemy's asymmetrical capabilities (WMD) before they are deployed to forward storage positions.

Conventional superiority, however, might not be sufficient to deter many potential adversaries under all circumstances.[366] A country's war-winning capabilities might not always mean war-deterring capabilities. It could be a challenge for Turkey to make its conventional capabilities visible to an NBC-armed adversary so that these capabilities may become part of the adversaries' risk calculation. For example, Israel's conventional superiority and more importantly nuclear ambiguity did not deter Iraqi missile attacks at Israel during the Desert Storm. In contrast, Iraq fired nearly 90 Al Hussein missiles at Israel and the Arabian Peninsula during Desert Storm.[367] Even while dealing with adversaries that are deterrable, denying the aggressors' expectations of a quick military victory and political gain by pursuing asymmetric strategies would be very important. And if deterrence fails and NBC-backed aggression occurs, Turkey's threats to use conventional military force to inflict suffering and massive destruction on the aggressor is less likely to force the aggressor to back down or to capitulate. Thus, it is essential that Turkey acquire the capabilities to deny the enemy the political and military benefits of WMD acquisition. Therefore, analyzing Turkey's possible defense options

366 Edward Rhodes, "Conventional Deterrence," *Comparative Strategy*, Vol. 19, 2000, pp. 221-253.
367 *Proliferation: Threat and Response*, p. 41.

and necessary measures to counter the increasing WMD risks to its security in the concluding chapter is necessary.

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VII. CONCLUSION: COUNTERING WMD USE

A. INTRODUCTION

The nations adjacent to Turkey pose one of the greatest challenges to Turkish security. The acquisition of weapons of mass destruction capabilities and missiles of ever increasing ranges by Iran, Iraq and Syria have emerged as a major Turkish concern in the post-Cold War Turkish security environment. The continued proliferation of weapons of mass destruction, particularly chemical, biological weapons and ballistic missiles in Turkey's immediate vicinity, has made their use by an adversary increasingly likely. Current proliferation trends among Turkey's southeastern neighbors suggest that future sub-regional contingencies involving Turkey might include the use of chemical or biological weapons against Turkish forces or strategic assets with a wide array of effects from small-scale and/or theatre-wide use on the battlefield to large-scale use on Turkish population centers. Ironically, several vital military assets and some major Turkish cities including Ankara are practically defenseless against missile threats.

Turkey's new security environment is rather different from the past, and now all three of Ankara's southeastern neighbors are seeking to acquire advanced weapons of mass destruction and ballistic missile capabilities. It is questionable whether a conventional superiority would deter an NBC-armed adversary unless Turkey has the capability to protect itself against a potential WMD attack. Protecting Turkey from an NBC attack is particularly challenging. The inadequate defenses (especially effective BW defenses) to counter an NBC attack that now exists reveal how difficult it is for a nation to deter and to defend against such weapons. Moreover, the inadequate quantity of CW detectors and the absence of standoff early warning BW detectors, the lack of vaccines for many BW agents and the inability to decontaminate people, equipment and areas exposed to BW agents could complicate Turkey's ability to prevail in future contingencies. Therefore, to counter the increasing WMD threats, Turkey must adopt a political-military approach to WMD defense, across the spectrum from policy to acquisition, to doctrine and training and finally to the conduct of operations.

B. DETERRING WMD USE

Turkey's best defense against a potential WMD aggression will be a robust deterrent posture. Therefore, deterrence should remain the first and preferred line of defense against a WMD aggression.[368] In this regard, the basic tenets of deterrence must be maintained and strengthened.

One essential element of deterrence is maintaining a credible capability from active to passive defenses and to counterforce capabilities. This will enhance Turkey's ability to deter its potential adversaries. However, traditional approaches to deterring NBC use in unstable regions such as the Middle East are inherently uncertain.[369] Moreover, traditional models of deterrence will likely fail against an aggressor who might be seeking asymmetrical strategies to pursue its politico-military objectives.[370] The conditions during the Cold War that had successfully established a country's deterrence credible—such as mutual understandings, open communication lines and shared interest and risks—simply may not apply to an NBC-armed aggressor.[371] Moreover, countries such as Iraq, Iran and Syria are much more prone to risk-taking and willing to confront a conventionally superior adversary, especially when their militaries are supported with unconventional capabilities. As a consequence, the threat of retaliation and punishment is necessary but is not likely to be sufficient to deter and—if deterrence fails—to protect Turkish forces in future regional contingencies, especially if certain thresholds are already passed.

In the same manner, the growing ability of Turkey's southeastern neighbors to deliver these weapons at extended ranges might undercut Turkey's deterrence incredibly. This is most visible with Iran, who successfully tested the 1,300 km range Shabab-3 in July 2000. Syria has also made extensive efforts to increase the ranges of its missile by modifying its Scuds. Reports of the Iranian work on Shabab-4 and Shabab-5 missiles

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368 Robert G. Joseph and John F. Reichart, *Deterrence and Defense in a Nuclear, Biological, and Chemical Environment*, National Defense University Press, 1999, p. 27.
Available online: http://www.ndu.edu/ndu/centercounter/det&deftext.pdf.

369 Ibid.

370 Robert Joseph, "Counter-Proliferation in the Middle East?" *The International Security Review*, The Royal United Services Institute for Defense Studies, 2000, pp. 183-187.

371 Ibid.

suggest they could strike a number of European capitals, including Ankara. This could complicate Turkey's defense.

Expanding capabilities of Iran, Iraq and Syria that will enable them to strike most parts of Turkey might undermine Turkish military force's confidence in conventional superiority and naiveté in hoping for a purely conventional theater war. The increased capabilities of Ankara's southeastern neighbors make it essential to develop and to deploy new defensive capabilities to counter chemical and biological warfare threats, and be prepared to survive, fight and prevail in future military engagements. However, although not adequate by itself, a Turkish military with an overwhelming retaliatory capability still remains critical for Turkey's deterrence of both initial use and follow-on use of NBC weapons by Iran, Iraq and Syria. Therefore, Turkey's conventional military capabilities must be complemented with effective counter-proliferation capabilities.

Given the potential strategic and operational impact of the use of NBC weapons, Turkey must focus on protecting its forces. In fact, being prepared for the use of NBC weapons and missiles, and being able to mitigate and overcome their effects, is an essential element in deterring their use. While in some aspects, Turkey is slowly moving forward in acquiring the necessary capabilities to counter the full range of NBC capabilities, much more still needs to be done.

C. PREVENTING AND RESPONDING TO WMD USE

For an effective defensive response to NBC threats, the Turkish defense planners must make an evolutionary shift in how they plan future warfare. Ensuring that Turkey is prepared for the WMD threats can only be managed by institutionalizing counter-proliferation in every facet of Turkish military activities. Countering the WMD threat, particularly the chemical, biological and missile threats, must be a high priority in defense planning. In this regard, simultaneously improving intelligence and logistics support and the active and passive defense and counterforce capabilities is required.[372]

Conventional ballistic missiles, chemical and biological weapons will be likely condition of future warfare, especially in contingencies on Turkey's periphery. Therefore,

[372] Robert G. Joseph and John F. Reichart, *Deterrence and Defense in a Nuclear, Biological, and Chemical Environment*, p. 7.

ensuring that the emerging NBC threat is realistically incorporated into service and joint doctrine and operational planning is essential.[373] The Army, Navy and Air Force and the field commanders should embed counter-proliferation in their planning and training and above all, in their thinking. All military exercises—including routine individual, unit, joint and combined training exercises—should incorporate counter-proliferation concepts, equipment, and tasks as well as realistic chemical and biological threat scenarios.[374] The services should place increased importance on counter-proliferation strategies and WMD defense requirements especially in their acquisition programs, training, and doctrine. Moreover, the Ministry of Defense (MOD) and Turkish General Chief of Staff must ensure that the four areas of counter-proliferation—counterforce, active defense, passive defense, and consequence management—are fully considered in their planning, policies, doctrine, acquisition, and other functions. Turkey also should work with the U.S., Israel and its allies in Europe to enhance its counter-proliferation capabilities.

In this context, two critical research questions need to be analyzed in detail:

1) What are Turkey's defense options to counter the increasing weapons of mass destruction threats to its security? 2) What are the tasks of policy and required capabilities that Turkey must posses for the likelihood of WMD use against Turkish forces, and population centers?

D. TURKEY'S DEFENSE OPTIONS

1. Active Defenses

a. Counterforce Options

While deterrence must remain the crucial element of Turkey's response to WMD threats, Turkey should undertake prudent defense measures realizing that deterrence might fail. As a part of Turkey's emerging counter-proliferation policy, Ankara should consider taking effective defense measures against increasingly longer-

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373 Ibid, p. 16.

374 U.S. General Accounting Office (GAO), *Weapons of Mass Destruction: DOD's Actions to Combat Weapons Use Should be More Integrated and Focused*. NSIAD-00-97 (Washington D.C.: U.S. Government Printing Office, May 2000), p. 5.
Available Online: http://www.gao.gov/new.items/ns00097.pdf.

range ballistic missiles by increasing its counterforce capabilities with a highly capable Air Force and deploying effective missile defenses.

Currently, Turkey's deterrent posture against WMD threats results from its superior conventional forces with a capability to occupy large areas. Such a capability should be enhanced with a strong air force and air defense assets. In the case of an imminent WMD or ballistic missile attack, Turkey should possess highly capable long-range fighterplanes with skilled pilots that can preemptively strike any enemy missile launchers and WMD facilities before these weapons can be used against Turkey. In the case of aggression, Turkey should maintain the necessary retaliatory capabilities and be able to punish the aggressor by inflicting enormous destruction and thus raise the cost for the aggressor's behavior. The Turkish air force should be able to strike deep underground targets as well as protect its ground forces from the release of agents. Moreover, both the Air Force and Army should adopt a targeting doctrine, especially for critical mobile targets, such as missile launchers, deep in enemy territory.

b. Missile Defenses

In the missile defense arena, the best defense option for Turkey would be a Boost Phase Intercept system, which can also help with deterrence, since part of the attacking missile will fall in the country launching it.[375] A missile defense cooperation would also reinforce Turkey's defense ties with both NATO and the emerging EU security institutions and would decrease the Turkish incentives to develop its own WMD retaliatory capabilities.

A boost-phase system could serve as the first line of defense not only for Turkey but also for the United States and other NATO allies by complementing future ground- and sea-based missile defense systems that might be deployed within NATO WMD missile defense architecture. Under this option:

[375] Zalmay Khalilzad, Ian O. Lesser and F.Stephen Larrabee, *The Future of Turkish-Western Relations,* p. 89.

1. Ground-based boost-phase interceptors and X-band radars could be deployed in southeastern Turkey to counter an Iraqi ballistic missile threat to Turkey and to NATO and US territory.

2. These ground-based boost phase interceptors could be supplemented by deploying sea-based boost-phase interceptors in the Black Sea to defend against Iranian ballistic missiles launched from bases in northern Iran.

3. The U.S. AWACSs equipped with the Airborne Laser system could be deployed to Turkey and operate from Turkish air bases as a component of this system to detect and to identify ballistic missiles launched from sites in Syria, Iraq in the south and Iran.[376]

A major benefit for the boost-phase system to be based in Turkey would be the opportunities for cooperating with the U.S. and with other NATO allies. In addition to Turkey, those NATO allies currently planning to field theater-missile defense systems, or those who might acquire them in the future (such as Germany, Italy, or the Netherlands) could deploy these capabilities to defend Turkish-missile defense sites and other Turkish facilities. In crises, NATO countries could also deploy combat aircraft or naval assets to Turkey to defend sea-and air-based missile defense systems operating from the Black Sea and from Turkish airfields.

Deploying a boost-phase missile defense system in Turkey would also have a positive effect on U.S.-Turkish and Turkish-NATO relations, which are strained over particular issues from time to time. Given Turkish threat perceptions as a result of increased WMD and missile capabilities of its southeastern neighbors mentioned in Chapters II, III and IV, Ankara's extensive participation in a defensive system would also be supported by the Turkish public, since it would boost Turkey's influence and freedom of action in regional crises and status within NATO. This would help Turkey feel less isolated and marginalized because of the recent developments in the European Defense Initiative. Moreover, Turkey's participation in a defensive system within a NATO framework against Middle Eastern threats would be less threatening to the Iranians, Iraqis and Syrians than a US-Israeli-Turkish trilateral Arrow missile defense system. This could put Turkey directly on these nations' lists of missile targets. If, in fact, it has not already

[376] Richard Sokolsky, "Imagining European Missile Defense," *Survival*, Vol. 43, Autumn 2001, pp. 111-28.

been placed on such lists. Moreover, such a unilateral Turkish move outside of NATO's defense posture could also create new polarizations in the Middle East. For both technical (since it would not violate ABM treaty agreements of 1972) and operational reasons, Turkish-based systems based on boost-phase technologies would also be less threatening to the Russians because the missile interceptors would be located too far from Russian missile sites to intercept Russian missile launches in the boost-phase. Moreover, such a missile defense systems would be in a NATO framework in which Russia could also be included.[377]

Turkey should therefore encourage the United States and its NATO European Allies to share the responsibility for Turkey's defense. For example, in return for actively participating in a missile defense program, Turkey could demand that the United States help Ankara boost the country's air defenses. Access to the U.S. developed radars, sensors and battle management components of a missile defense system would be needed. Such a division of responsibilities could allow Turkey to adopt the appropriate defense systems depending on its threat perceptions (which is currently very high when compared to its European counterparts) and assessments of the appropriate missile-defense technologies and basing modes would best meet Ankara's national defense requirements. Launching a missile defense umbrella, by this way, and the deployment of early warning stations and interceptor missiles on Turkish territory will contribute to Turkey's deterrent posture.

2. Passive Defenses

An effective NBC defense response should fully integrate the following requirements for an effective passive defense into all planning and operational activities of the Turkish Armed Forces:

a. Detection and Identification:

Timely and reliable detection and identification of BW agents is very difficult but is very critical. Detection and identification will be the essential basis for all subsequent defensive or retaliatory actions against an NBC-aggression. For an effective NBC defense, timely reporting of CBW use, medical surveillance, medical diagnosis of

[377] Richard Sokolsky, "Imagining European Missile Defense," *Survival*, Vol. 43, Autumn 2001, pp. 111-28.

affected personnel (military and civilian), and the routine collection of environmental samples will be needed. The most challenging task will especially be confirming a biological weapon use on the battlefield. As a result, detection and identification information will be the essential basis of an appropriate and robust defensive response to a potential NBC use against Turkish forces.

b. Warning and Reporting:

Timely reporting and warning of an NBC threat or attack is a key requirement that must be integrated into operational planning. Once the existing NBC threats are assessed and interpreted or an attack is believed to have occurred, appropriate warning and reporting procedures must be disseminated and facilitated. Effective communication links must be established and maintained between deployed forces, regional commands and civil authorities. In order to accomplish this, there is a need to improve intelligence assessments and adapt existing concepts, doctrine, plans, training standards and exercises to meet the NBC challenge. For a timely and accurate intelligence to warn of a pending attack developing NBC attack scenarios, ranging from early use of CBW on the battlefield against staging areas, ports and airfields to the use of CBW as a last resort to create massive casualties in population centers is essential.

c. Physical Protection:

Deploying sufficient and better suits, masks and protective gears, as well as detectors for both and chemical and biological agents will be needed. While individual respiratory protection by existing protective masks currently forms the main foundation of CBW defense and offer acceptable levels of protection, principally for chemical weapon use, they may not fully eliminate the possibility of biological agents exposure. However, using low cost masks may still be an effective means to limit the potential impact of a BW attack. In this regard, rapid production of protective BW vaccines for specific agents in the potential adversaries inventory and vaccination of forces in peacetime will increase the overall effectiveness of a robust NBC defense.

d. Consequence Management:

Following a CBW attack, limiting the spread of CBW contamination and decontaminating personnel and equipment will be necessary. Especially, the food and

water supplies as well as other natural sources in the area should be protected form contamination. Likewise contaminated or infectious food and material should be destroyed and disposed of. In the case of contamination of food and equipment, alternative logistic supplies should be planned in peacetime.

e. Medical Countermeasures and Support:

An advanced medical response is critical for an effective defense against an NBC attack. Medical countermeasures, such as pre- and post-exposure vaccination, prophylaxis and treatment, will be crucial in mitigating the potential operational impact of NBC attack. The medical response should include planning and training for post-exposure, diagnosis, the capability for mass treatment, mass casualty preparedness, medical evacuation, quarantine and restriction of movement.

f. Training and Exercising:

Planning all joint and individual military exercises that are designed to address the capability and training shortfalls against NBC attacks will be fundamental in preparing for an effective NBC defense response. Special training standards for NBC defense should be identified and military forces should receive individual and collective training on NBC risks, protective-countermeasures and consequence management to be able to operate effectively in an NBC environment and to conduct the assigned missions in all circumstances. Therefore, realistic NBC scenarios should be incorporated into all military programs.

E. RECOMMENDATIONS

All the steps reviewed above are necessary to mount an integrated Turkish response to an NBC attack. Therefore all these considerations should be reflected in revised doctrine, tactics, techniques and procedures and incorporated into operational plans. Understanding the nature of the WMD threat and responding to the risks are the most important requirements. This will help identify Turkey's vulnerabilities and capability shortfalls in WMD defense. The key findings and overall recommendations for an effective Turkish response to WMD threats can be outlined as follows:

- Being prepared for chemical, biological, and nuclear contingencies should be an urgent new priority for the Turkish military in planning for future regional contingencies, force projection scenarios, expeditionary

operations and peacekeeping operations. The Turkish military should have the ability to operate in a contaminated environment.

- Effective active and passive defenses against biological attack are a key unmet need. Maintaining and enhancing the capability to achieve military objectives in the face of a WMD threat without absolute or total dependence on NATO and U.S. extended guarantees are also priorities.
- This puts a premium on conducting joint or national NBC defense exercises based on realistic threat scenarios in which Turkish forces can receive individual and collective NBC defense training against NBC threats and develop experience with protective-countermeasures.
- Turkish defense planners must adapt existing military strategies, doctrines, concepts and force structures to the requirements of counter-proliferation to be able to conduct counterforce operations and (if necessary) to conduct countervalue strikes.
- Turkey must participate in a regional ballistic missile defense and/or the U.S. missile defense system, in which permanent missile defense interceptors and radar systems will be stationed in Turkey.
- Chemical and biological self-protection gear and medical countermeasures and treatments for distribution to military personnel and civilian populations in cities falling within range of Iranian, Iraqi and Syrian missiles are essential for reassuring the civilian population and avoiding panic in crises and war. In this regard, Turkey should immediately procure the protective equipment necessary for its forces and civilians.
- Turkey might not be able to meet all of these needs on its own, however, and should encourage its NATO allies to provide additional NBC defense equipment and related materials to equip military and civilian personnel.
- Turkey should make every effort to create baseline capabilities of its own in peacetime while counting on its NATO allies to supplement Ankara's capabilities in crises or war.
- In the phase of escalation, a common NATO response would be preferable. However, in the absence of effective NATO backing, an overwhelming unilateral Turkish conventional retaliation will be necessary. A credible U.S. extended deterrence commitment with a robust U.S. nuclear weapons presence in Turkey might enhance Turkey's deterrence posture against its adversaries.
- Ankara should use its existing NATO alliance and strategic military cooperation with Israel to pursue a broader counter-proliferation dialogue. Emphasizing NATO's commitment to defend Turkey in the case of armed aggression will be necessary.
- Turkey's commitment to arms control agreements can also play a vital role in strengthening the international legal framework for invoking an

> international and/or NATO response to NBC-backed aggression against Turkey. Turkey's adherence to the Nonproliferation Treaty (NPT), the Biological and Toxin Weapons Convention (BTWC) and the Chemical Weapons Convention (CWC) could help create an international consensus in which compliant states, like Turkey, could orchestrate a political campaign against WMD aggression.[378]

F. CONCLUSION

Although still not really commensurate with the degree of the threat of WMD proliferation, interest in and understanding of NBC-related issues seem to be growing in Turkey, especially after the 1990-1991 Gulf War. To respond effectively to WMD challenges on its periphery, Turkey must increase its national defense capabilities by adopting an effective counter-proliferation strategy both politically and militarily. Turkey must have the ability to protect its forces and to ensure that they can operate effectively in an NBC environment. This requires the maintenance of effective conventional forces as well as detailed contingency planning for deterrence and defense in future regional contingencies. It also requires that both active and passive defenses be given high priority. Without these tools, the risk of a failure of conventional deterrence will be higher and the likelihood of WMD use against Turkey will increase.

Dramatic changes have occurred in Turkey's security environment, but NATO's security guarantees and U.S. extended deterrence commitments with a robust nuclear presence in Turkey remain essential elements of Turkey's security. Therefore, NATO's security guarantees, which hinge ultimately on the U.S. nuclear presence and U.S. extended deterrence commitments in Europe, and Turkey's own national defense and deterrence posture must remain convincing and credible to Turkey and to nations that possess WMD and potential WMD proliferators in the region. As Duygu Bazoglu Sezer, a prominent professor of international relations at Bilkent University of Ankara, has

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[378] The current state of Turkey's adherence to major agreements and regimes regarding non-proliferation of WMD and export control of dual-use material and technologies is as follows: the Chemical Weapons Convention (CWC), the Biological and Toxin Weapons Convention (BTWC), the Nuclear Non-Proliferation Treaty (NPT), the Comprehensive Test Ban Treaty (CTBT), the Australian Group (AG), the Nuclear Suppliers Group (NSG), Zangger Committee, the Model Protocol for the Application of Safeguards (93+2), the Missile Technology Control Regime (MTCR) and the Wassenaar Agreement (WA). See Turkish Ministry of Defense, *White Paper 2000-Chapter 7*. Available online: www.msb.gov.tr.

observed, "Turkey needs to be reassured that it would be protected against proliferation if and when it indeed occurs."[379]

But, in case deterrence fails, Turkey should have military options developed in the framework of deterrence based on denial and punishment. Moreover, Iran, Iraq and Syria must be made to understand that the employment of weapons of mass destruction would not provide any political or military advantage but, rather, would cause them to suffer enormous risks and destruction. Moreover, Turkey's military posture should demonstrate to any potentially hostile proliferant that Turkey could not be coerced or defeated by the threat or use of WMD and that Turkey has the will and ability to respond effectively to new threats to its security as they emerge. At minimum, Turkey should have—and be perceived as having—the capability and will to retaliate against an enemy by holding at risk the enemy's strategic assets that can be attacked and destroyed if the enemy undertakes any foolish action against Turkey.[380] Therefore, it is essential for Turkey to acquire the capabilities to deny an enemy the benefits of using WMD. These capabilities—including active and passive defenses as well as improved counterforce capabilities—would offer the best option to strengthen deterrence and provide the best hedge against deterrence failure.[381]

Yet, there is a long way to go. In military and contingency planning and military exercises, Turkish defense planners must re-evaluate how to deter and to defend against new and emerging NBC threats on the country's periphery. The challenges and the dilemmas Turkey is facing today are enormously complex and difficult. However, Turkey has the necessary determination and ability to defend its forces, population and territory against WMD challenges by every means possible. Since its foundation, Turkey has deterred and defended its territorial integrity successfully. Neither friend nor adversary should forget that the challenges Turkey faced in the past have only made the nation more formidable and determined to preserve its integrity in the future.

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[379] Duygu Bazoglu Sezer, "Turkey's New Security Environment, Nuclear Weapons and Proliferation," *Comparative Strategy*, Vol.14, No.2, Spring-Summer 1995, pp.167-168.

[380] Robert G. Joseph and John F. Reichart, *Deterrence and Defense in a Nuclear, Biological, and Chemical Environment*, p. 26.

[381] Robert Joseph, "Counter-Proliferation in the Middle East?" pp. 183-187.

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