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The Proliferation of Weapons of Mass Destruction in the Mediterranean: Security Challenges to NATO

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ABSTRACT

The post-Cold War era has been marked by a new era of concern about a new arms race, the proliferation of weapons of mass destruction (WMD) and the evolving role of state and non-state actors in the acquisition, spread, and employment of WMD. The acquisition of arms is especially significant in the area around the Mediterranean. It has a distinctive quantitative and a qualitative dimension: regional powers have not only been stockpiling larger arsenals and investing more in indigenous scientific training and research; they have also been making efforts to develop longer-range missiles, more accurate missiles and more lethal chemical and biological weapons.

As the Iran-Iraq war and the chemical threat during operation Desert Storm illustrated, countries may resort to less expensive means of mass destruction. More than 25 countries, including a number in the Middle East and the Mediterranean region, either have or are developing nuclear, biological, or chemical weapons. More than 20 nations are developing ballistic missiles as a delivery system.

In responding to this perceived threat, Allied leaders decided, after 1994, to step up NATO´s drive against the proliferation of weapons of mass destruction. Two groups have been established to study the issues involved: one that focuses on the political and preventive aspects of NATO´s approach to dealing with proliferation (Senior Politico-Military Group on Proliferation); and the Senior Defence Group on Proliferation, which is responsible for considering how NATO´s defence posture can support its non-proliferation efforts and provide protection to the organisation´s members should the latter fail.

Proliferation efforts are concentrated in a few Mediterranean states, some of which, like Iran, Iraq and Libya, are of special concern. Those countries have an anti-Western track record and have advocated anti-Western policies. Some of them have espoused, in particular, anti-American policies and, in the process, have attacked American allies in the Middle East and elsewhere. They have also posed a threat to the West, sponsoring terrorism against Western targets and/or on Western soil. Of all Arab states, Libya was the only one to have used missiles against Western targets – it fired on the Italian island of Lampedusa, following the U.S. raid on Tripoli in 1986.

Ballistic missile threats will increase the vulnerability of European population centres. This has already produced substantial changes in strategic perceptions of

the Mediterranean countries. The southern flank of the Alliance – from Portugal to Turkey – would be especially vulnerable to attack by medium and long-range missiles emanating from those countries. Large portions of the southern flank are already within range of aircraft deployed in North Africa. The most serious threat is faced by Turkey, which is fully exposed to air and missile risks.

For the time being, proliferation trends have a prevailing South-South character. WMD are more likely to be used in South-South conflicts. It is in this context that Middle Eastern and North African countries face real military threats. In general, the rationale for arms build-up is intricately linked to internal politics, regional security concerns and leadership aspirations – the search for prestige – more so than to the West.

But WMD are likely to be used against deployed NATO forces involved in regional contingencies, like UN-mandated peace-keeping, peace-making or peace-enforcement, the military enforcement of trade sanctions, and embargoes. WMD could be used to coerce and deter the United States and/or a Western coalition from responding to aggression, such as the one Iraq initiated against Kuwait in 1990. The threat of the use of WMD would be played as a gambit to undermine political support for forward deployment of Allied troops, complicating coalition-building within and outside the region. Due to the risks involved, perceived vulnerability of countries exposed to WMD will complicate cooperation among Allies and render more difficult decisions regarding intervention beyond Europe.

A scenario which should receive great attention on the part of Allied policymakers is that of radical or violent political change, especially in the Maghreb, but also in Saudi Arabia or Egypt, resulting in the coming to power of fundamentalist or other types of anti-Western political forces. Radical Islamic regimes, with their nuclear ambitions and missile interests, could accelerate WMD acquisition patterns and worsen the outlook for their use in times of crisis.

State-sponsored terrorism using WMD is more likely than the use of an intercontinental ballistic missile to deliver WMD to a target in a Western country. In fact, a proliferator would probably be more inclined to use unconventional delivery means or a terrorist proxy in order not to be identified.

Overall, the Alliance has reasons to be worried about the strategic consequences for its members of the proliferation of WMD. The WMD threat is

evolving and is becoming more serious. In the near/medium term, developments in this area will probably present some important risks to the Alliance.

I. Weapons Proliferation in the Post-Cold War World

I. 1. WMD Proliferation: An Emerging Concern

The end of the Cold War has left profound uncertainties as to the nature and extent of future military threats to Europe and its allies. With the demise of the "Soviet threat", security concerns have not receded into the background. Instead, a new host of military and security threats has emerged. Some of these security risks are concentrated in the Mediterranean area. [1] In the new international environment, practical NATO interest in the Mediterranean is gathering pace very rapidly and is giving rise to new perspectives and new policy concerns, alongside traditional security issues. Much of the new interest in the Mediterranean flows from its role as a centre of regional turmoil and conflict.

The renewed consciousness of the Mediterranean as an area of geopolitical consequence was expressed by American Secretary of Defense, William Perry, at the February, 1995 Munich Conference on Security Policy: “While we must focus on Russia and the East, real, immediate challenges to NATO allies have been mounting in the South”.[2] The remarks of the then U.S. Deputy Assistant Secretary of Defense for European and NATO Affairs, Joseph Kruzel, at the February, 1995 AFSOUTH meeting, further elaborated on that point: “For NATO, the Mediterranean, rather than the Elbe, has become the front line for a variety of security issues ranging from the spread of extremism and uncontrolled migration to the proliferation of weapons of mass destruction...” [3]

The post-Cold War security agenda has been marked by a new era of concern about a new arms race, the proliferation of weapons of mass

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[1] The term "Mediterranean" is employed here to mean North Africa (Maghreb), the Middle East and the Persian Gulf region. Because of their relevance to this report, the countries that are the focus of the case study are: Algeria, Libya, Egypt, Israel, Syria, Iraq, Iran and Saudi Arabia.

[2] Quoted in Rodrigo de Rato, *Draft Interim Report*, North Atlantic Assembly (NAA), Sub-Committee on the Southern Region, AM 295, PC/SR (95) 2, October, 1995, p. 6.

[3] *Ibid.*, p. 9.

destruction (WMD)[4] and the role of state and non-state actors in the acquisition, spread, and employment of WMD. The former Soviet Union – especially Russia, which inherited the bulk of WMD stockpiles, manufacturing potential, and technologies – became a central focus of regional and world proliferation concerns. A number of countries continue selling missiles, nuclear technology and other WMD components and transferring technology to would-be or active proliferators.

The proliferation trend is especially conspicuous in two areas of the world: in East/South Asia and in a zone defined by an arc that stretches from Algeria to Pakistan. The unprecedented and disturbing fact in the current rearmament cycle over the last fifteen years is the continued acquisition of conventional weaponry, coupled with the escalating danger of weapons of mass destruction.

The proliferation of WMD is a side effect of the end of the Cold War, of the loose character of the system that emerged in its wake and of the different factors shaping deterrence today. In the new international climate, aspiring regional powers no longer find themselves bound by the restraints posed by the two major power blocs on client states with military aspirations. Those constraints have disappeared, both with the disintegration of the Soviet Union, and with the loss of cohesion in the Western bloc. The decline of regional deterrence, based on superpower backing, and the resulting sense of insecurity of regional allies, has caused many nations to turn towards doctrines of self-reliance in security. This is especially the case of North African and Middle Eastern countries – such as Libya, Syria, Iraq, and Algeria – which relied on the Russian security guarantee.

Developments in recent years have demonstrated the progress of countries in Asia and the Mediterranean toward acquiring advanced WMD, especially longer-range missiles. Those breakthroughs in terms of

[4] For the purposes of this analysis, "weapons of mass destruction" are defined as nuclear, chemical and biological and the means for their delivery, including ballistic missiles.

armaments have presented the most difficult challenges to non-proliferation efforts. The nuclear tests conducted in 1995 by France, and the nuclear blasts in 1998, by India and Pakistan, came in open defiance to global non-proliferation global standards. The latter blew off South Asia´s long-simmering tension over the nuclear rivalry, increasing the dangers associated with regional conflict. In July, 1998, Iran´s test of the Shahab-3 missile extended Tehran´s capability, enabling it to strike at targets in the Middle East. In August, 1998, North Korea tested its Taepo Dong missile over Japan, further straining an uneasy stability in the region. Pakistan flight-tested its 1,300-km range Ghauri missile, which it produced with North Korean assistance. India flight-tested its Agni II MRBM, which has a range of about 2,000 km. China conducted the first flight test of its DF-31 mobile ICBM in August, 1999; it will have a range of about 8,000 km.

Iraq's stand against the United Nations (UN) Security Council regarding weapons inspections emphasised the limits of verifying compliance to international agreements. Similar concerns have been expressed about the strategy to fight the pending proliferation threats derived from North Korea's nuclear and missile programmes. Meanwhile, Russia´s continuing economic difficulties have heightened the challenge for Moscow to control the leakage of sensitive weapons-related materials and technology beyond its borders.

A 1996 RAND report says that "southern Europe and the Mediterranean, the least nuclear of theaters during the Cold War, has emerged as a leading, perhaps, the leading, center of nuclear and other WMD risks". [5] The report predicts that within ten years every southern European capital will be within range of ballistic missiles based in North Africa or the Levant. The presence of those systems has already produced strong effects on strategic calculations along the northern shore of the Mediterranean.

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[5] Ian O. Lesser and Ashley J. Tellis, *Strategic Exposure: Proliferation Around the Mediterranean* (Santa Monica, CA: RAND, 1996), p. 25.

Indeed, NATO members do not possess the early warning, air defence, or retaliatory capabilities necessary to deter the "over the horizon" threat emanating from the Middle East or North Africa. Portugal, Spain, Greece and Turkey and France, to some extent, are especially vulnerable to the political and military consequences of instability throughout this region and the way they will impact on proliferation developments.

I. 2. Tracking the Debate on WMD

The concern about proliferation of weapons of mass destruction was first highlighted at official level in the United States. Indeed, several months before Iraq´s invasion of Kuwait, Secretary of Defense Richard Cheney foresaw that "ten years from now, by the year 2000, the number of developing countries producing their own ballistic missiles is expected to be up to 15. Some of the 15 are already producers, and others are likely to have this capability by the end of the decade. And that list of 15 does not count the countries that could end up buying missiles on the international arms market. Included among the 15 are such countries as Iran, Iraq, Libya, Syria and North Korea. And at least six of the 15 will have intermediate-range missiles by the turn of the century ...These missiles can be equipped to carry a wide variety of warheads – chemical, biological and nuclear, as well as conventional. Some of the countries now developing missiles are the ones that have nuclear weapons programmes and by the end of the decade the list of nuclear club members with missiles will almost surely be far larger than it is now. As for chemical and biological weapons, 23 foreign countries have confirmed or suspected chemical warfare programmes, and 10 have confirmed or suspected biological warfare programmes. Many of these countries have, or soon will have, ballistic missiles. Once again, that list would include Iran, Iraq, Syria, Libya and North Korea". [6]

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[6] Statement of 14 June, 1990; quoted in Anthony H. Cordesman, *Weapons of Mass Destruction in the Middle East* (Brassey´s, London: 1991), pp. 1-2.

In the United States, WMD have rapidly moved up the security agenda to be considered the "most serious threat" to world security. [7] The experience of the war with Iraq was defining in this regard. American armed forces were particularly not well prepared to destroy mobile missiles launched against Israeli and Saudi cities, as well as targeting Iraqi WMD facilities. After the war, Americans discovered that Saddam Hussein had a much more extensive nuclear weapons program going than was thought before the war. Moreover, during the war, they also learned that they had failed to destroy his biological and chemical warfare efforts. These events served to draw a lesson: that American forces should be prepared for, in a very likely future occurrence, being faced with the use of WMD by a foe.

Combating weapons proliferation of all types has become one of – if not the – highest priority missions for the Department of Defense. Pentagon planners have engaged in efforts to change strategic thinking in view of the uncontrollable proliferation trend. Thus, in December, 1993 Washington redefined its military doctrine and adopted the Defence Counterproliferation Initiative (DCI). The aim of the programme is devising new weapons and equipment for U.S. and allied troops to use against reckless enemies in a dangerous new environment. Former Defense Secretary Les Aspin stood up for the programme, alleging that today's rogue states "can be expected to have different doctrines, histories, organizations, command and control systems and purposes ... In addition, proliferators may have acquired [nuclear, biological and chemical weapons] for the express purpose of blackmail or terrorism and thus have a fundamentally different calculus not amenable to deterrence". [8]

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[7] Secretary Cohen's confirmation hearing, January, 1997 (http://www.defenselink.mil/pubs/prolif97).

[8] "If Nonproliferation Fails, Pentagon Wants «Counterproliferation» in Place", *The Washington Post*, 15 May, 1994. The five points of the Initiative are: recognising that counterproliferation is a new mission, not the old Cold War mission; tailoring new U.S. weapons to destroy weapons of mass destruction; re-examining the strategies used against the new kind of threat;

The May, 1997 Report of the Quadrennial Defense Review [9] concluded that the threat or use of nuclear, biological, or chemical (NBC) weapons is a likely condition of future warfare and could occur in the early stages of war to disrupt U.S. operations and logistics. The Department of Defense November, 1997 report depicts a daunting post-Cold War era security scenario where the prospect of nuclear confrontation no longer exists, but where the global spread of NBC is a much more terrifying prospect. The report says that hostile groups and nations have tried – or been able – to obtain these weapons, the technology and home-grown ability to make them or ballistic missiles that can deliver massive annihilation hundreds of mile away:

" WMD have already spread into new hands. As the new millennium approaches, the United States faces a heightened prospect that regional aggressors, third-rate armies, terrorist cells, and even religious cults will wield disproportionate power by using – or even threatening to use – nuclear, biological, or chemical weapons against our troops in the field and our people at home.

Indeed, a paradox of the new strategic environment is that American military superiority actually *increases* the threat of nuclear, biological and chemical attack against us by creating incentives for adversaries to challenge us asymmetrically". [10]

In May, 1996, a National Intelligence Estimate[11] was released that concluded that the ballistic missile threat to the United States and her allies is fifteen years away. However, many in Congress disagreed with the findings and established an independent commission. The report of the

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focusing intelligence efforts on detecting weapons of mass destruction; ensuring international cooperation in curtailing the threat of such weapons.

[9] William S. Cohen, Secretary of Defense, *Report of the Quadrennial Defense Review*, May, 1997 (http://www.defenselink.mil/pubs/qdr).

[10] U. S. Department of Defense (DoD), *1997 Proliferation: Threat and Response*. Emphasis in the original (http://www.defenselink.mil/pubs/prolif97/message.html).

[11] U. S. General Accounting Office, National Security and International Affairs Division *Foreign Missile Threats: Analytic Soundness of Certain National Intelligence Estimates* (GAO/NSIAD-96-225, 30 August, 1996).

“Commission to Assess the Ballistic Missile Threat to the United States” (chaired by the former Secretary of Defense under President Ford, Donald H. Rumsfeld and incumbent Secretary of Defense in the current Bush Administration), played a pivotal role in the American discussion, as its findings generated a strong momentum in favour of National Missile Defense (NMD). It judged the threat "broader, more mature, and evolving more rapidly" than previously estimated by the intelligence community. Moreover, it concluded that the ability to identify, track and assess the danger is declining. This is due to reductions in the intelligence budgets and the increasing ability of states of concern to hide their weapons programme. The report estimates that states of concern, like North Korea and Iran, could develop an ICBM within a five-year period.[12]

Similarly, the September, 1999 Report of the National Intelligence Council (NIE) concluded that during the next 15 years the United States would "most likely face ICBM threats from Russia, China and North Korea, probably from Iran and possibly from Iraq..."[13] William Cohen, the former U.S. Secretary of Defense under the Clinton administration, has added Libya, which, as he said, has chemical capabilities and is seeking to buy long-range missiles, to the list of possible states of concern. However, missile projections by 2015 were made independent of significant political and economic changes in the countries concerned. Thus, the NIE set its own limits as a risk assessment tool.

The perception of a rising, imminent missile threat from states of concern is adding momentum for NMD deployment, especially under the current Bush Administration. The system is intended to protect the entire U.S. territory from limited attacks by intercontinental ballistic missiles,

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[12] US Congress, *Report of the Commission to Assess the Ballistic Missile Threat to the United States*), Executive Summary, 15 July, 1998 (www.fas.org/irp/threat/ missile/ rumsfeld/index.html). Hereafter quoted as *Rumsfeld Report*.

[13] National Intelligence Council*, Foreign Missile Developments and the Ballistic Missile Threat to the United States Through 2015*, September, 1999 (www.fas.org/irp/threat/missile/nie99msl.htm).

particularly those armed with nuclear, chemical or biological warheads. The first aim of NMD is to protect the U.S. homeland from a ballistic missile attack from a hostile emerging state that might acquire or develop ICBMs. Those countries are the so-called states of concern – Iran, Iraq and North Korea – and they have emerged as the primary argument for NMD deployment.

I. 3. NATO´s Response to the WMD Proliferation Concern

According to Article 5 of the Washington Treaty, one of NATO´s fundamental missions is to deter and defend against any threat of aggression against the territory of a NATO member state. During the Cold War, the Soviet Union constituted the main threat to the Alliance and military planning revolved around this perceived danger. In the present era, NATO members have progressively acknowledged that the proliferation of WMD poses a direct military threat to Alliance members, especially those in Europe, as well as their deployed military forces around the globe. It is understood that the existence of WMD in NATO´s periphery can also undermine the achievement of a stable security environment in Europe, another important NATO goal.

The development of an agreed policy on proliferation has become a major goal for the North Atlantic Alliance. In November, 1991 the NATO leaders at the Rome Summit adopted the NATO Strategic Concept. This document noted the risks posed by "the buildup of military power and the proliferation of weapons technologies...including weapons of mass destruction and ballistic missiles capable of reaching the territory of some member states of the Alliance," and identified the proliferation of weapons of mass destruction and ballistic missiles as problems requiring special attention by the Alliance. [14]

[14] "The Alliance's New Strategic Concept," Communiqué of the NATO Heads of State and Government, Rome Summit Meeting, 7 December, 1991, para. 18.

At the January, 1994 Brussels Summit, NATO Heads of State and governments acknowledged proliferation of WMD as a security threat and recognised this as a matter of serious concern to the Alliance. Accordingly, Allied leaders decided to step up NATO´s drive against the proliferation of weapons of mass destruction. This was a prelude to the announcement, at the June, 1994 Istanbul NATO Ministerial meeting, of NATO's new policy framework on proliferation.

On this occasion, an "Alliance Policy Framework on Proliferation of Weapons of Mass Destruction" was adopted, the stated objective of which is to "prevent proliferation from occurring or, should it occur, to reverse it through diplomatic means. The other relevant aim of this document is also to address "the military capabilities needed to discourage WMD proliferation and use, and, if necessary, to protect NATO territory, populations and forces".[15]

The document contained several relevant observations. First, the persistent trend of continued pursuit, by a number of states on NATO's periphery, of weapons of mass destruction or their means of delivery. The second pattern that was becoming obvious was that WMD proliferation could occur despite traditional international non-proliferation efforts. NATO stressed that its response to this growing WMD threat must include both political and military measures to discourage WMD proliferation and use.

The other visible outcome of the Brussel´s Summit was the creation of two expert working groups with the mandate of preparing an "overall policy framework" designed to "intensify and expand" NATO's political and defence efforts against proliferation.[16] The Senior Politico-Military Group on Proliferation (SGP) focus was on the political and preventive aspects of NATO´s approach to dealing with proliferation; the Senior Defence Group on

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[15] "Alliance Policy Framework on Proliferation of Weapons of Mass Destruction", issued at the Ministerial Meeting of the North Atlantic council , Istanbul, 9 June 1994, *NATO Review*, June, 1994, pp. 28-29.

[16] "Declaration of the Heads of State and Government Participating in the Meeting of the North Atlantic Council held at NATO Headquarters", Brussels, 10-11 January, 1994, Press Communiqué M-1(94)3, 11 January, 1994.

Proliferation (DGP) was charged with identifying the security implications of proliferation for Alliance defence planning, assessing the military capabilities to deter threats or use of NBC weapons, and to protect Allied populations, territory and forces. [17] Both groups are to report to the North Atlantic Council through the Joint Committee on Proliferation (JCP).

The most meaningful part of the work came to be concentrated in the DGP. It analysed the more consequential issues to the Alliance. The DGP adopted a three-phase approach to the issues under analysis. The first phase examined the risks to NATO posed by the NBC and missile programmes in countries that could be a potential threat to the Alliance, both in its vicinity and farther afield. The second phase focused on the consequences of proliferation for defence planning and on the range of capabilities required to respond to the threat. The last phase evaluated Alliance and national capabilities, in light of the requirements identified in the study. [18]

The first part of the three-year study was completed in December, 1994. It took the form of a classified document, because of political sensitivities that arose when it came to evaluating regions or countries of concern to the Alliance. The risk assessment confirmed existing worries about the large number of states in NATO´s periphery in the process of acquiring or developing WMD. It analysed technological trends to the year 2010 and examined the trading links between suppliers and client states with respect to WMD technology, materials, and expertise. The report concluded that the combination of supplier states eager to provide sensitive equipment and the

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[17] Gregory L. Schulte, "Responding to Proliferation: NATO´s Role", *NATO Review*, vol. 43, no. 4, July, 1995 (web edition).
[18] Robert Joseph, “Proliferation, Counter-Proliferation and NATO”, *Survival*, vol. 38, no. 1, Spring, 1996, p. 121.

fast pace of technology transfers to proliferating states "could significantly affect the risks facing NATO..." [19]

It is understood that likely proliferating states may have a different profile from those adversaries whom NATO faced during the Cold War. The new wave of proliferating nations are less inclined to abide by the strict rules of deterrence; they are more likely to use WMD in the pursuit of personal goals. Those weapons could be used early in a conflict in order to gain an initial advantage and to cripple enemy forces. Additionally, WMD are increasingly seen as weapons of choice, instead of weapons of last resort. Problems with deficient command and control reinforce fears of their accidental or unauthorised use.[20]

The risk assessment stressed the need to differentiate between types of threats and types of weapons. For instance, nuclear weapons seem to be most prized by proliferating states, but biological weapons seem to have emerged as a key threat. Proliferating states (as well as non-state actors, such as terrorist groups) may prize chemical weapons for their psychological value.

The second phase of the work programme carried out by the DGP addressed the political-military consequences of the threat and the necessary capabilities for Alliance response. The report was presented at the meeting of Allied Defence and Foreign Ministers in November, 1995.[21] It began with an identification of possible scenarios of NBC threats and attacks, which included: direct threats to NATO territory; threats against the Alliance's ability to intervene in regional conflicts; and threats to other out-of-area missions, such as peacekeeping and humanitarian operations.

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[19] Ashton Carter and David Omand, "Countering the Proliferation Risks: Adapting the Alliance to the New Security Environment", *NATO Review*, vol. 44, no. 5, September, 1996 (web edition).

[20] Joseph, *op. cit*., p. 122.

[21] "Final Communiqué of the Defence Planning Committee and the Nuclear Planning Group of the North Atlantic Treaty Organisation in Ministerial Sessions in Brussels", Press Communiqué, MDPC/NPG-2(95)117, 29 November 1995; see also, "Final Communiqué of the Ministerial Meeting of the North Atlantic Council," 5 December, 1995, M-NAC-2 (95)118.

According to the report, the greatest threat posed by proliferation of WMD and their means of delivery in the foreseeable future is to deployed NATO forces. Accordingly, NATO forces will be most vulnerable to attack while entering the region, when forces are concentrated at ports and airfields. NATO should, therefore, give first priority to protecting those forces involved in regional contingencies. A potential adversary may see possession of WMD as a means of overcoming NATO conventional force superiority. WMD could alter the military balance in a region if it were to succeed in degrading the operating capability of NATO deployed forces, either directly or indirectly.

There were also several implications for NATO force capabilities from the report's findings. The DGP listed its priority capability requirements in three tiers. The first two tiers covered requirements for responding to current and near-term threats, while the third concentrated on requirements should the threat evolve. [22] The Tier I capabilities were identified by their multiple and synergistic value to the Alliance. They were described as "core integrative military capabilities that make the most substantial contributions to the Alliances´ politico-military objectives for dealing with proliferation; serve as force multipliers to increase the overall effectiveness of the Alliance's defence posture for dealing with proliferation risks; and respond to existing conditions and expected near term trends". [23]

The DGP report emphasised that these core capabilities for Alliance defence must be incorporated into national planning and training procedures in order to be fully effective. They include:

- Strategic and operational intelligence;
- Automated and deployable command, control, and communications;
- Wide area ground surveillance;
- Stand-off/point biological and chemical agent detection, identification, and warning;

[22] Carter and Omand, *op. cit.*
[23] Carter and Omand, *op. cit.*

- Extended air defences, including tactical ballistic missile defence for deployed forces and
- Individual protective equipment for deployed forces. [24]

Beyond these top priority needs, the DGP identified additional capabilities that would contribute significantly to the Alliance's political aims and operational objectives for dealing with existing or expected proliferation risks. These Tier II capabilities included advanced computer applications, reconnaissance platforms and sensors, layered missile defences, medical countermeasures, and special munitions capable of countering WMD. [25] Equally significant, the DGP called for enhanced Alliance capabilities in several areas: active defences, passive defences, response or counter-force capabilities, intelligence capabilities and battle management. [26]

The DGP's third effort addressed current NATO and national capabilities, identified deficiencies, and examined areas for improvement and cooperation. The North Atlantic Council (NAC) approved the report's recommendations for military capabilities improvements and its work programme and schedule timing at its 1996 Berlin ministerial session. [27]

The Defence Ministers endorsed the DGP's efforts at their meeting in Brussels the following week, and pointed out the need for greater emphasis on protecting deployed troops in light of the eventuality of Alliance engagement in new, non-Article 5 missions. Highlighting the significance of the decisions approved, the NAC authorised "for the first time in 12 years ... an accelerated "catch-up" process to incorporate the recommended DGP programs in the two year force goals". [28] The NAC approved the DGP's

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[24] "NATO'S Response to Proliferation of Weapons of Mass Destruction: Facts and Way Ahead", 29 November, 1995, Press Release (95) 124.
[25] Carter and Omand, *op. cit.*
[26] See Joseph, *op. cit.*, p. 124.
[27] "Final Communiqué, Ministerial Meeting of the North Atlantic Council in Berlin, 3 June, 1996," Press Communiqué M-NAC-1 (96) (63).
[28] Jeffrey A. Larsen, *The Development of an Agreed NATO Policy on Nonproliferation*, 1995-1997 NATO Research Fellowship, 27 June, 1997, p. 23; see also "Final Communiqué, Meeting of the North Atlantic Council in

comprehensive programme of 39 action plans, based on priorities identified in the second phase of the work programme, and designed to implement needed programs across several NATO bodies.

The DGP was tasked with monitoring progress in achieving these goals as each action plan has defined milestones. Ministers approved a set of revised force goals in December, 1996. [29] Force goals tailored to address proliferation risks have thus been integrated in the collective defence planning of the Alliance. [30]

The SGP and the DGP are continuing their work on NATO´s political and military efforts against proliferation. The DGP, in particular, is engaged in the further development of Alliance doctrine, planning, training and exercising with a view to improving NATO´s overall defence posture. Subsequently, the Alliance Military Authority endorsed the reformulation of NATO's operational doctrine, training, exercises and planning guidance on the risks posed by NBC weapons – known as “Guidance for Effective Military Operations in an NBC Environment. [31]

In December, 1998, the Alliance Foreign and Defence Ministers expressed their determination to upgrade the Alliance´s efforts regarding the evolving proliferation risk. They tasked the Council in Permanent Session to prepare, for the April, 1999 Washington Summit, “proposals for an initiative

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Defense Ministers Session on 13 June, 1996”, Press Communiqué M-NAC (DM)-2 (96) (89), 13 June, 1996.

[29] “Ministerial Meetings of the Defence Planning Committee and the Nuclear Planning Group held at NATO HQ”, Brussels, 17 December, 1996, Press Communiqué M-DPC/NPG-2 (96)173.

[30] “NATO´s Response to Proliferation of Weapons of Mass Destruction”, *NATO Basic Fact Sheet*, no. 8, April, 1997.

[31] “Final Communiqué, Meeting of the North Atlantic Council in Defence Ministers Session held in Brussels on 2nd December, 1997”, Press Release M-NAC-D-2(97)149, 2 December, 1997; J. A. Larsen, *NATO Counterproliferation Policy: A Case Study in Alliance Politics*, Air Force Academy Institute for National Security Studies, November 1997, Occasional Paper no. 17 (http://www.fas.org/irp/threat/ocp17.htm).

to ensure that the Alliance has the political and military capabilities to address ... the challenges of the proliferation". [32]

The 1999 Washington Summit Communiqué identified the proliferation of WMD as a "matter of serious concern" [33] for NATO and outlined the WMD Initiative as the Alliance's response to this threat. It stated that the Alliance's "defence posture must have the capability to address appropriately and effectively the risks associated with the proliferation of NBC weapons and their means". Nevertheless, it also stressed the importance of arms control, non-proliferation, export control regimes and security and confidence building measures as political and diplomatic means to prevent proliferation. [34]

The declaration calls for the improvement of the Alliance´s defence posture against the risks and potential threats of WMD, "including through work on missile defences". It envisages the possibility of NATO operations beyond its borders for dealing with proliferation risks. It states that capabilities "must be flexible, mobile, rapidly deployable and sustainable. Doctrines, planning, and training and exercise policies must also prepare the Alliance to deter and defend against the use of NBC weapons. The aim in doing so will be to further reduce operational vulnerabilities of NATO military forces while maintaining their flexibility and effectiveness despite the presence, threat or use of NBC weapons" [35]

The Alliance has made significant progress in implementing the WMD Initiative approved at the Washington Summit to improve overall Alliance political and military efforts in the area of non-proliferation. Among other things, this Initiative seeks to: improve the quality and quantity of intelligence

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[32] "Final Communiqué, Ministerial Meeting of the North Atlantic Council held at NATO Headquarters", Brussels, Press Release M-NAC-2 (98) 140, 8 December, 1998; see also "Meeting of the North Atlantic Council in Defence Ministers Session", Press Communiqué M-NAC-D-2 (98) 152, Brussels, 17 December, 1998.

[33] "The Alliance's Strategic Concept", North Atlantic Council in Washington, D. C, 23-4 April, 1999, Press Release NAC-S (99) 65, 24 April, 1999, para. 22.

[34] Para. 53-h and para. 40.

[35] Para. 56.

and information sharing among Allies on proliferation; develop strategies to increase awareness of this matter and support non-proliferation; enhance Allied military programmes to counter WMD threats, and study collective Allied measures for civil protection against such threats. [36] During the Ministerial Meeting on 15 December, 1999, it was confirmed that NATO was implementing the decisions taken in Washington and also completing an enhanced WMD intelligence database and information repository. [37]

By the end of 2000, a WMD Centre was established in Brussels, which will improve co-ordination of WMD-related activities at NATO Headquarters. It will also strengthen non-proliferation, arms control, and disarmament-related political consultations and defence efforts to improve the preparedness of the Alliance to respond to the risks of WMD and their means of delivery. In this framework, there have been widespread consultations among Allies on disarmament and non-proliferation issues on a broad perspective.

Consultations on proliferation issues have also taken place with Russia under the Permanent Joint Council, with Ukraine in the NATO-Ukraine Commission and with other Partners in the Euro-Atlantic Partnership Council. These consultations help exchange views and find a common approach regarding this pressing problem. Indeed, ex-Soviet Union countries are themselves a source of concern regarding their assistance in covert proliferation efforts. Mediterranean Dialogue countries are also kept informed of NATO´s approach to WMD proliferation risks.

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[36] Crispin Hain-Cole, "The Summit Initiative on Weapons of Mass Destruction: Rationale and Aims", *NATO Review*, vol. 47, no. 4, Winter, 1999 (web edition).

[37] "Final Communiqué, Ministerial Meeting of the North Atlantic Council held at NATO Headquarters, Brussels, on 15 December, 1999", Press Release M-NAC2 (99) 166, 15 December, 1999.

II. Explaining the Proliferation of Weapons of Mass Destruction in the Mediterranean

II. 1. Characteristics of the Current Arms Race

The arms race trend in the Mediterranean basin has been underway since the 1980s, which registered, on the one hand, the increase and spread of conventional weapons, and the proliferation of systems of "unconventional weapons", on the other. In that decade, military spending reached a peak level in the period 1982-84. Still, in 1988 the Middle East imported some $17 billion in arms, almost 38% of the weapons sold in the world. [38]

The Mediterranean region is one of the most heavily armed regions of the world. During 1993-96, the Near East represented 57.4% of all arms transfer agreements worldwide (in value). [39] According to *The Military Balance*, Middle East and North African states imported, in 1999, weapons worth some $60 billion. This region is the largest market for weapons transfers, both in absolute terms and as a proportion (7,2%) of gross domestic product (GDP).[40] Regional pressures and the prevailing sense of insecurity have driven military spending in Mediterranean states to "levels far beyond what developing states can afford". [41]

WMD proliferation in this area has a distinctive quantitative and qualitative dimension: regional powers have not only been stockpiling larger arsenals and investing more in indigenous scientific training and research; they have also been making efforts to develop longer-range missiles, more

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[38] U. S. Arms Control and Disarmament Agency, *World Military Expenditures and Arms Transfers*, *1988*, Washington, D.C., June, 1989, pp. 3 and 6-8.
[39] Of this figure, 24.4% alone go to Saudi Arabia; Richard F. Grimmett, *Conventional Arms Transfers to Developing Nations, 1989-1996*, Congressional Research Service, Washington, D. C, 13 August, 1997 [97-778 F], pp. 8-9.
[40] IISS, *The Military Balance 2000-2001* (London: Oxford University Press for IISS, 2000), p. 129, 302.
[41] A. Cordesman, *After the Storm: The Changing Military Balance in the Middle East* (Boulder: CO, Westview Press, 1993), p. 14.

accurate missiles and more lethal chemical and biological weapons. [42] This is a pattern highlighted by A. Cordesman who registers the shift in emphasis in the military milieu from “mass” and “force quantity” to force quality. This view is the result of the lessons learned by Mediterranean states as a result of Israel´s victories in regional wars against its Arab neighbours, the Iran-Iraq War and the Gulf War: that technological edge offsets numerical and conventional superiority.[43] The current trend towards the acquisition of state-of-the-art and WMD makes the Mediterranean the region with the “highest concentration of emerging NBC weapons and missile programs of any region in the world...”[44]

This arms race has several geopolitical readings and implications. The introduction of ballistic missiles of increased range and accuracy, in addition to efforts to develop indigenous, chemical and biological weapons systems, has led analysts to readjust the strategic calculus on the balance of military forces in the region. As Lewis puts it, “although population size and density, technological competence, tanks, aircraft and artillery continue to be of importance, the ability to evade early warning systems, invade adversary airspace, and inflict punishment both on civilian populations and on military formations with «terror weapons» has assumed greater specific weight”. [45] Ballistic missiles, especially medium and long-range will increasingly be able to reach European territory, creating feelings of vulnerability among the population and political leaderships.

As the Iran-Iraq war and the chemical threat during Desert Storm illustrated, countries may resort to less expensive means of mass destruction. More than 25 countries, including a number in the Middle East

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[42] Sami G. Hajjar, *Security Implications of the Proliferation of Weapons of Mass Destruction in the Middle East*, U. S. Army War College, Strategic Studies Institute, 17 December, 1998, p. 21.
[43] Cordesman, *op. cit*., p. 20.
[44] DoD, *1997 Proliferation: Threat and Response*, chap. “The Middle East and North Africa”.
[45] William Lewis, “The Military Balance: Change or Stasis?”, in P. Marr and W. Lewis (eds.), *Riding the Tiger: The Middle East Challenge After the Cold War* (Boulder, CO: Westview Press, 1993), p. 70.

and Mediterranean region, either have or are developing nuclear, biological, or chemical (NBC) weapons. More than 20 nations are developing ballistic missiles as a delivery system. [46] Some of these nations – such as Libya, Iraq, Syria and Iran – have, over the years, raised the concerns of the international community. They have exhibited anti-Western attitudes, either openly opposing the United States´ lead and/or NATO, or have shown a pattern of behaviour of non-compliance with international law and agreed norms of behaviour.

Many of the technologies associated with the development of NBC weapons, especially chemical and biological agents, have legitimate civil applications and are classified as dual-use. The effectiveness of chemical and biological weapons, applied as a war tool, is especially high against a civilian population. Chemical and biological weapons do not confer the ability to seize territory but, as "terror weapons", they can have a tremendous psychological effect on the population and on adversary forces, as well as produce severe social and economic damage. [47] The mere threat of employment would have a tremendous psychological impact and could cause the paralysis or disruption of civilian life and economic activity.

Even very small quantities of cheaply produced and easily concealed biological weapons can be lethal over very large areas, eventually larger than the area covered by fallout from a nuclear explosion and much larger than the area contaminated by chemical weapons. [48] Chemical weapons can also cause a considerable number of casualties: Aum Shinrikyo – the Japanese sect – demonstrated the ease with which a terrorist could develop

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[46] Ivan Eland, *Protecting the Homeland: The Best Defense Is to Give No Offense*, CATO Policy Analysis, no. 306, 5 May 1998; quoting William Cohen, remarks at a Department of Defense news briefing, 25 November, 1997.

[47] John D. Steinbruner, "Hearings on United States Security Interests in the Post-Cold War World", Statement to the House Committee on National Security, 6 June, 1996, p. 3; Nadine Gurr and Benjamin Cole, *The New Face of Terrorism* (London: I. B. Tauris, 2000).

chemical weapons and use them in a mass attack. In 1995 the group left plastic bags containing the nerve agent Sarin on the Tokyo subway. Twelve people were killed and 5,000 injured. The casualties were still limited because of the low potency of the toxin. The group was also experimenting with VX, a nerve agent that can be 10 to 1,000 times stronger than Sarin.

Most of the materials required to make weapons of mass destruction are increasingly accessible to small states and non-state organisations. Revealing, in this regard, are clues indicating that, in the early 1990s, Osama bin Laden, a major sponsor of international terrorism based in Afghanistan, tried to buy nuclear weapons. Bin Laden´s agents unsuccessfully scoured former Soviet republics for enriched uranium and weapons components that could be used to set off the fuel. [49] Later he decided to settle for chemical weapons, which are easier to produce. During his five-year stay in Sudan, he allegedly tested, with the help of Sudanese officials, nerve agents that would be dispensed from bombs or artillery shells. A news story says bin Laden tried to develop chemical weapons to use against U.S. troops in the Persian Gulf.[50] American officials have indeed alleged that the pharmaceutical plant targeted by the cruise missiles strikes had known ties to bin Laden and was producing chemicals to develop the deadly VX nerve agent. [51]

In an interview with *Time* magazine, bin Laden proclaimed his intention of intensifying efforts to obtain non-conventional weapons. He justified these efforts with the argument that “acquiring weapons for the defense of Muslims is a religious duty“. He added: “It would be a sin for

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[48] National Defense University (NDU), INSS, *1997 Strategic Assessment: Flashpoints and Force Structure*, chap. 11, “Proliferation” (http://www.ndu.edu/inss/sa97/sa97ch11.html).

[49] Hugh Davies, “Bin Laden Aide “Tried to Buy Atomic Arms”“, *Electronic Telegraph* 1221, 28 September, 1998.

[50] *CNNInteractive*, "CIA: Bin Laden Planned Chemical Attack on U.S. Troops in the Gulf", 19 November, 1998.

[51] "Clinton Strikes Terrorist Bases", *Electronic Telegraph*, 21 August, 1998. The administration has since admitted that the attack on the factory was a mistake.

Muslims not to try to possess the weapons that would prevent the infidels from inflicting harm on Muslims". [52]

Increasingly, defence reports and analyses have stressed that chemical or biological weapons may become more attractive to terrorist groups intent on causing panic or inflicting large numbers of casualties. [53] In fact, a 1999 U.S. Congress report states that at least a dozen terrorist groups (most of them located in the Mediterranean area) "have expressed an interest in or have actively sought nuclear, chemical, or biological weapons capabilities". [54] Those weapons could also be used by certain nations to deter a nuclear attack or prevent annihilation by a power with conventional military superiority.

One additional concern is the possibility of WMD delivered by ballistic or cruise missiles. Middle Eastern political and defence elites have shown a preference for WMD, as they demonstrate to be uniquely suited to filling the emerging security vacuum. SSMs (surface-to-surface missiles) are the platform of choice for WMD weapons, as they can carry nuclear, biological, or chemical payloads with minor modifications to the missile's configuration.

Prior to the onset of the Gulf War, one of the principal concerns of the Western coalition military commanders was the perceived likelihood that the Iraqi leader would launch chemical weapons attacks against Allied forces. President Bush sent a letter to Saddam Hussein threatening to use nuclear weapons against Iraq if that nation used chemical or biological weapons (aboard missiles or other means of delivery) against the military forces of the

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[52] "Wrath of God", *Time*, vol. 153, no.1, 11 January, 1999.

[53] The Interagency OPSEC Support Staff, *Intelligence Threat Handbook*, April, 1996, Section 4, "Terrorist Intelligence Operations"(http://www.fas.org/irp/nsa/ioss/threat96/part04.htm); Canadian Security Intelligence Service, "Chemical, Biological, Radiological and Nuclear (CBRN) Terrorism, Report no. 2000/02, (http://www.csis-scrs.gc.ca/eng/miscdocs/200002_e.html).

[54] US Congress, Commission to Assess the Organization of the Federal Government to Combat the Proliferation of Weapons of Mass Destruction, *Combating Proliferation of Weapons of Mass Destruction,* 104th Congress, 14 July, 1999.

Coalition.[55] The Iraqi threat of using chemical weapons and the use of ballistic missiles against coalition forces and Israeli and Saudi cities has led to a re-evaluation of NBC weapons in the hands of hostile states. Baghdad, using an outdated missile system, was able to attack major urban centres in Israel.

Although it is more difficult to build a nuclear device, since the break-up of the Soviet Union, it has become easier to obtain both fissile material (enriched uranium and plutonium) and nuclear technology. Poor economic conditions in the Community of Independent States (CIS), lax security at dozens of facilities with nuclear material, poor accounting and control of fissile material, and efforts by organised crime to profit from the smuggling of such material all make it more likely that terrorists could get nuclear-related items.

II. 2. Incentives in the Proliferation Environment

Foreign states and terrorist groups have focused on Russia as a source of nuclear materials, technologies and arms. The need to generate capital for investment and the conversion of the defence industry has led many republics, especially Russia, to put their military arsenals up for sale. Arms sales have included advanced weapons to some of the countries, which provoke the greatest concern over proliferation. Such sales have included SU-27 fighters and surface-to-air missiles to China, submarines to Iran, and T-72 tanks to Syria.

Continuing economic stringency affecting Russian nuclear and missile scientists and workers has resulted in the emigration to countries willing and able to pay them. Russian scientists working in North Korea (Democratic People´s Republic of Korea, DPRK) reportedly have been instrumental in the DPRK's missile programme. In 1992, Russian security forces barely

[55] Richard A. Falkenrath, Robert D. Newman e Bradley A. Thayer, *America´s Achilles´ Heel* (Cambridge, MA, The MIT Press, 1998), p. 73.

prevented the emigration of 32 nuclear specialists to the DPRK to work on nuclear weapons programmes.

Additionally, the breakdown of governmental authority and control has made tracking weapons transfers from ex-Soviet Union states increasingly difficult. Corruption is pervasive and involves government and military officials as well as private citizens. Government officials form quasi-official corporations involved in arms sales and Mafia-like groups transfer stolen weapons or resell them in black market operations.

Russian Foreign Intelligence Service spokesmen have judged that "some countries in the Middle East, Central Asia, south[ern] Africa, and Brazil show interest in Russia´s nuclear, chemical, biological, and missile technologies" and warn about efforts to acquire Russian WMD secrets. [56] Indeed, there is evidence that since 1992 there were seven instances of theft of weapons-usable fissile materials. [57]

The nature of the international environment is a major contributory factor to the upsurge in WMD proliferation, as has been observed in the past decade. In the aftermath of the crumbling of the Soviet Union, regional allies in the Arab world were deprived of any form of external, extended deterrence. In the evolving strategic environment and in the context of economic decline or stagnation, national leadership increasingly tends to rely on independent military programmes. Regional actors must now cater in the international weapons market for their defence, or, as in the case of some Mediterranean actors, to turn to development of indigenous military programmes, often with external assistance.

In retrospect, with all the dangers of superpower confrontation in the Arab world, the Soviet connection also had a stabilising influence. [58] The risk of superpower intervention made Moscow wary of the dangers of regional conflict and of the need to rein in its clients as far as their weapons

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[56] Graham H. Turbiville, Jr., *Weapons Proliferation and Organized Crime: The Russian Military and Security Force Dimension*, NDU - INSS Occasional Paper 10, Proliferation Series, June, 1996.
[57] US Congress, *Combating Proliferation*, p. 2.

acquisitions were concerned. Although the Soviet Union was the main arms supplier to the Arab confrontation states, the Soviets have consistently sought a political rather than purely military settlement of the Middle East conflicts.

The other consequence of international developments underway in the post-Cold War period is that there are ways, today, to acquire the technology needed to develop and produce WMD. Indispensable, in this regard, is the extensive external assistance proliferating states have received from external sources. In the past, Europe, the United States, South Africa, Israel and countries in South America, have contributed to this problem, especially to the assembly of Iraq´s formidable arsenal. [59] But, in the past decade, Russia, China and North Korea, in particular, have provided the lion´s share of proliferating technologies. Despite strong international (especially American) pressure, they have not stopped the transfer of dangerous arms and technologies to several Middle Eastern states, such as Iran.

China has carried out extensive transfers to Iran's solid-fuelled ballistic missile program and has provided important missile-related items and assistance to countries of concern, like Iran, Libya and North Korea. It has supplied Pakistan with a design for a nuclear weapon and additional nuclear weapons assistance. It has even transferred complete ballistic missile systems to Saudi Arabia (the 3,100-km range CSS-2) and Pakistan (the 350-km range M-11). [60]

Chinese firms have also provided chemical warfare-related production equipment and technology to Iran. [61] China is a supplier of nuclear

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[58] Lesser and Tellis, *op. cit.*, p. 6.
[59] Kenneth R. Timmerman, *The Death Lobby: How the West Armed Iraq* (Bantam Books, London, 1992).
[60] *Rumsfeld Report*.
[61] Rodney W. Jones and Mark G. McDonough with Toby Dalton and Gregory Koblentz, *Tracking Nuclear Proliferation: A Guide in Maps and Charts,* Carnegie Endowment for International Peace, 1998, “China”, excerpt from *Tracking Nuclear Proliferation*, Carnegie Endowment for International Peace, 1998 (http://www.nyu.edu/globalbeat/asia/china/carnegie.html).

technology to Iran, which has caused the United States, in the 1990s, to lead international efforts to prevent the supply of nuclear technology to Iran. China has provided Iran with three zero-power and one very small 30 kilowatt (thermal) research reactors, and two or three calutrons (electromagnetic isotope separation). These calutrons are not able to produce fissile uranium, but they serve to train personnel in sensitive nuclear activity. During the October, 1997 summit with Chinese Pres. Jiang Zemin, U.S. Pres. Clinton obtained firm, written reassurances that Beijing would end its nuclear relations with Iran.

Iran is the very example of a country which has benefited from "broad, essential, long-term assistance" [62] for its ballistic missile infrastructure from Russia, and, to a lesser extent, China: "In recent years, Russian and Chinese entities have continued to supply a wide variety of missile-related goods, technology, and expertise to Iran". [63] Iran acquired, from North Korea, the 300-km SCUD B missile and the 500-km SCUD C. [64] Iran wants to supplement its existing ballistic missile inventories with the purchase, from North Korea, of missile technology for the construction of the 1,000-1,300-km No Dong. [65] Iran is also, with North Korean and Chinese help, seeking to develop and produce its own ballistic missiles with the objective of producing a medium-range ballistic missile to threaten targets up to a distance of 3,000 km.

Despite recent promises that Russia and China made to halt sales of missiles and missile technology, they have growing ties with Iran. They look toward that country as a source of valuable hard currency. Sales of arms and technology are a means of challenging what they perceive as growing U. S. world dominance and they serve other strategic reasons.

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[62] *Rumsfeld Report*.
[63] Office of the Secretary of Defense, DoD, *Proliferation: Threat and Response*, January, 2001 (http://www.defenselink.mil/pubs/ptr20010110.pdf), p. 36.
[64] NDU – INSS, *1997 Strategic Assessment*, chap. 11
[65] DoD, 2001 *Proliferation*: *Threat and Response*, p. 13.

II. 3. An Unstable and Unpredictable Regional Environment

The strategic environment on Europe´s Mediterranean periphery is characterised by numerous actual and potential flash points and has an intense history of rivalries and wars. The cycle of fear, mistrust and violence, at work since the end of World War II, seems to have become the dominant political and social pattern in the region. It has impeded the establishment of a stable regional security balance, which hinges, first and foremost, on the achievement of a comprehensive Arab-Israeli peace.

The tensions in the region, resulting mainly from the failure of the Oslo peace process and the military imbalance that it has shaped, could provide the opportunity for the use of those weapons. This imbalance, coupled with the deteriorating political climate in the Middle East, has been responsible for an arms race by Israel and its neighbours for weapons of mass destruction. Setbacks in the Middle East peace process are a major factor prompting regional powers to stock up on weapons. Most have acquired missile systems with Israel as their primary target.

The 1991 Gulf War deepened, rather than ameliorated, regional security concerns and the result has been an increase in regional defence budgets. Paradoxically, the Gulf War had some unintended military lessons: by demonstrating the superiority of the Allied Coalition´s advanced weaponry, it showed that the United States or a coalition of industrialised Western states cannot be defeated using conventional weapons alone. [66] Former Indian Army Chief of Staff, K. Sundarji, expressed this thought when he remarked that “one principal lesson of the Gulf War is that, if a state intends to fight the United States, it should avoid doing so until and unless it possesses nuclear weapons”. [67]

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[66] David R. Tanks, “Key Proliferation Trends and Their Likely Impact on the Balance of Power in the Gulf: A Focused Evaluation”, in Jacquelyn K. Davis, Charles M. Perry e Jamal Al-Suwaidi (eds.), *Air/Missile Defense Counterproliferation and Security Policy Planning* (Abu Dhabi: The Emirates Center for Strategic Studies and Research, 1999), p. 17.
[67] Quoted in Falkenrath et al., *op. cit*., p. 221.

To be sure, states in the Mediterranean region as a whole are highly vulnerable, for all face serious internal and external challenges. [68] To start with, at the domestic level, these are countries – be they constitutional monarchies or republics – governed by authoritarian or less than democratic regimes, which have a narrow power base. Regime legitimacy is provided by identification with religious values and/or with the pursuit of regional policies and foreign policy achievements or military prowess, which increase the leaders´ prestige.

Mediterranean societies are highly militarised due to the existence of a series of bilateral or regional conflicts that pit the states against each other. The reasons for regional competition and conflict are diverse. Regional security dilemmas are complicated by the existence of multiple and shifting alliances, old enmities, ideological clashes and geopolitical rivalries. In terms of security systems, the Mediterranean region can be analysed as three distinct systems: the Arab-Israeli-conflict system, the Persian Gulf system[69] and the North African system. There is, in general, substantial overlap between these three different systems.

In general, most Mediterranean states, especially those in the Middle East and Gulf sub-regions, have armed themselves with a view to deterring Israel and/or matching its military technological edge. The Israeli nuclear arsenal – which although not confirmed, most Arab states assume to exist – is the catalyst which propels the Arab quest for a strategic balance. This is especially the case with Syria, Iraq and Iran – Israel´s declared enemies – which have obtained these weapons for deterrence and defensive purpose against potential enemies with superior WMD capabilities.

In the Gulf, instability is fuelled by the competition between Iran and Iraq to dominate the region. Both countries were involved in a high-level eight-year war between 1980-88. Iraq´s arsenal is apparently linked to its aggressive regional ambitions and as offensive weapons against its larger

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[68] Lesser and Tellis, *op. cit.*, p. 9.
[69] Kenneth Katzman, *Searching for Stable Peace in the Persian Gulf*, U. S. Army War College, Strategic Studies Institute, 2 February, 1998, p. 2.

enemy, Iran. That country has grown progressively stronger in relation to the heavily sanctioned Iraq, in spite of U.S. efforts to isolate/contain the Iranian regime. This has alarmed some Gulf states, especially the United Arab Emirates, which perceive a direct threat from Iran, rather than from Iraq.

Tensions among the southern Gulf Arab states is a major reason for the Gulf Cooperation Council (GCC) failing to develop into an effective regional security organisation. There are countless intra-GCC disputes, ranging from mundane to fairly serious. Economic issues, such as oil production quotas and territorial issues, are especially significant sources of discord. Most GCC states resent Saudi Arabia for its domination of the GCC and for its heavy-handed dealings with its neighbours in the past.

In North Africa, Morocco, Mauritania and Algeria have been involved in on-and-off border wars and clashes over the destiny of the former Spanish colony, Western Sahara. Morocco has had to fight against Polisario, the movement that claims to represent the citizens of Western Sahara. Libya, under the erratic leadership of Col. Muammar Qadhafi, has aspired to the role of regional hegemony. In the process, it has fought a series of wars in Chad and attempted to interfere in several other sub-Saharan nations and in Egypt. Egypt has been caught in the dynamics of the Arab-Israeli conflict and is wary of the destabilising role of Libya. It has become increasingly involved in the problems of the Sudan, Red Sea countries and its African neighbours.

These conflicts tend to find their expression in military balances and strategic competition for military superiority. This pattern of conflict and rivalry has created an “interactive system”. The interconnectivity[70], characteristic of the regional security system, explains why regular conflict triggers an arms race throughout the various sub-regions of the Mediterranean: “each localised conflict and arms race involves a continuing competition to acquire more lethal technologies and weapons. Each new

[70] Hajjar, *op. cit*., p. 3.

advance in technology transfer and weapons acquisition influences the entire region, and acts to increase the overall pace of proliferation". [71]

In order to understand the destabilising nature of the acquisition of advanced weapons of mass destruction, one must view the problem within the context of the strategic culture of the Middle East. In this region, the search for military advantage is predicated on a perception of a regional environment that is threatening and hostile. Uncertainty is fed by mistrust on the part of the adversaries, each perceiving the others´ actions as a zero-sum game.

III. Assessing Mass Destruction Capabilities and Delivery Systems in the Mediterranean

III. 1. The Current Status of WMD in the Region

Israel´s military advantage in the region is conferred by its nuclear arsenal of 100 to 200 warheads to offset the vast Arab numerical troop superiority. Israel has an estimated 100 Jericho I and 50 Jericho II missiles. The Jericho I has a range of 500 km and the Jericho II has a range of 1,500 km. Most of these missile systems are believed to be equipped with chemical warheads. Israel is believed to have a biological[72] and chemical weapons capability. [73]

Iraq remains, in the words of A. Cordesman, "the most effective military power in the Gulf". [74] This is so in spite of the Gulf War, which caused the loss of 40-60% of its operational inventory of major weapons. At the time of the invasion of Kuwait, Iraq had a massive chemical weapons

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[71] Cordesman, *Weapons of Mass Destruction in the Middle East*, p. 3.
[72] Hajjar, *op. cit*., p. 8.
[73] See Gordon M. Burck and Charles C. Flowerree, *International Handbook on Chemical Weapons Proliferation* (NY: Greenwood Press, 1991), pp. 191-2.
[74] A. Cordesman, *The Conventional Military Balance in the Gulf in 2000*, (Washington, D. C: CSIS, January, 2000), p. 2.

capability, producing sufficient quantities of precursor materials for almost 500 tons of nerve agent VX. Following the disclosures made by Lt. Gen. Hussein Kamel (former Iraqi Minister of Industry and Military Industrialisation) after his defection to Jordan in 1995, the Iraqis admitted that they had also pursued an extensive biological warfare programme and had produced and weaponised a large number of biological agents, including tens of tons of anthrax, botulinum toxin, and an agent called aflatoxin. [75]

In 1990 the Iraqis launched a “crash programme” to develop a nuclear device. At the time of the Coalition bombings, Iraq was less than one year from producing one or two nuclear devices by using IAEA (International Atomic Energy Agency)-safeguarded highly enriched uranium from its Soviet and French-supplied research reactors.[76] Baghdad also had an extensive short-range ballistic missile stockpile, which included several hundred SCUD-B missiles (300-km range) purchased from the Soviet Union. Baghdad had an advanced programme to indigenously extend the SCUD´s range and modify its warhead (the Al-Hussein with a range of 650 km and the Al Abbas with a 950-km range). The Iraqis were also putting in place an extensive effort to reverse-engineer and indigenously produce complete SCUD missiles. [77]

The Gulf War seriously damaged Saddam Hussein´s WMD programmes. In the aftermath of the war, the UN Security Council established sanctions to prevent Baghdad from purchasing equipments and material that would enable it to reconstitute its WMD programmes. The Security Council also determined the creation of the Special Commission (UNSCOM), which, together with the IAEA, was charged with eliminating and verifying the destruction of Iraq´s WMD capabilities. While UNSCOM destroyed virtually all of Iraq´s known facilities and equipment, it gradually became clear that, despite the inspections, Iraq continues to hide

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[75] Jones et. al, *op. cit.*, chap. on Iraq (http://ceip.org/programs/npp/iraq.htm).
[76] “Iraq Weapons of Mass Destruction Programs”, U. S. Government White Paper, 13 February, 1998, p. 7.
[77] Jones et al., *op. cit*.

documentation and some equipment relating to key aspects of its past nuclear and other WMD activities. [78]

Since the Gulf War, the regime has continued to prioritise WMD programmes[79] by devoting large resources to biological, chemical and nuclear research efforts. [80] In spite of the destruction inflicted during the 1991 war, it retains significant technology, and much of the chemical and biological weapons equipment it hid before and during Desert Storm. [81] Iraq´s weapon programmes are on hold while UN sanctions prevail, but Baghdad is in a position to develop chemical and biological weapons quickly once those sanctions are lifted. [82] It also retains a long-range air strike capability and probably retains some SCUD and improved SCUD missile assemblies. [83] As far as the nuclear programme is concerned, Iraq "still retains sufficient skilled and experienced scientists and engineers as well as weapon design information that could allow it to restart a weapons program". [84]

Iran's military plans have sparked considerable concern that Tehran seeks to establish regional hegemony by building its military capabilities far beyond its legitimate defence needs. Iran purchased hundreds of ballistic missiles and the technology to produce them from North Korea and China. Tehran has acquired at least 200 SCUD B surface-to-surface missiles (300-km range), 150 SCUD C (500-km range) and 25 Chinese SRBM (short-range ballistic missile) CSS-8 (surface-to-surface missile with a 150-km

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[78] See Laurie Mylroie, "Iraq´s Weapons of Mass Destruction and the 1997 Gulf Crisis", *Middle East Review of International Affairs*, vol. 1, no. 4, December, 1997.
[79] Cordesman, *op. cit.*, p. 81.
[80] Anthony H. Cordesman, *U. S. Forces in the Middle East* (Boulder, CO: Westview Press, 1997), p. 94.
[81] US Government White Paper, *op. cit.*, p. 1.
[82] Cordesman, *op. cit.*, p. 94, US Government White Paper, *op. cit.*, p. 1
[83] Cordesman, *op. cit.*, p. 94.
[84] DoD, *2001 Proliferation: Threat and Response*, p. 40.

range). With imports of missile technology from North Korea and Russia, Iranians are now able to produce missiles themselves.[85]

In 1998, Iran, for the first time, flight-tested its 1,300-km range Shahab-3, a version of North Korea's No Dong, which Iran produced with Russian assistance. Iran's missiles can now reach major population and military centres across the Persian Gulf and as far as Saudi Arabia and Turkey. They can strike a wide variety of targets, like oil installations, airfields, ports and U.S. military deployments in the Persian Gulf. [86]

The 1999 NIE says Iran could test an ICBM that could deliver a several-hundred-kilogram payload to many parts of the United States after 2005, using Russian assistance or pursue a Taepo Dong-2-type (TD-2) ICBM (intercontinental ballistic missile). The Rumsfeld Report judges that Iran "now has the technical capability and resources to demonstrate an ICBM-range ballistic missile" of the TD-2 type.[87] The study also says that Tehran has acquired advance missile components that can enable it to build ballistic missiles with sufficient range to strike U.S. territory.

Iran's missile build-up is especially worrisome, given the possibility of marrying chemical warheads and biological warheads on long-range missiles. M. Eisenstadt affirms that "Iran has the most active chemical warfare program in the developing world". [88] The CIA estimated, in 1997, that Iran had produced and stockpiled up to 2,000 tons of chemical warfare agents, like blister choking, and nerve agents. [89] This chemical arsenal includes artillery shells and bombs. [90] Iran also has an active biological warfare programme underway since the early 1980s and has repeatedly tried

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[85] DoD, *1997 Proliferation: Threat and Response*.
[86] Barton Gellman, "Iran Missiles Mire U. S. in a Debate on Sanctions", *The International Herald Tribune*, 2 January, 1998; DoD, *op. cit.*
[87] *Rumsfeld Report*.
[88] Michael Eisenstadt, *Iranian Military Power* (Washington, D. C: The Washington Institute for Near East Policy, 1996), p. 26.
[89] James Phillips, *The Challenge of Revolutionary Iran*, The Heritage Foundation Committee Brief, no. 24, 29 March, 1996, p. 6.
[90] DoD, *op. cit*.

to buy biological agents from Europe. [91] The programme is still in the development and research stage, although it is likely Iranians have already the capability to produce small quantities of agents. [92]

But the West's chief worry is Iran's effort to develop nuclear weapons, which has been making progress under the cover of Iran's civilian nuclear power programme. Iran has attempted to acquire materials and technologies potentially useful to the production of nuclear weapons in a number of countries. Iranian acquisition teams have shopped for weapons-related nuclear equipment and nuclear scientists from poorly-guarded facilities in the former Soviet Union, concentrating on Azerbaijan, Kazakhastan, Turkmenistan, and Ukraine. [93]

There is some disagreement among experts as to Iran's progress in that direction. A minimal assessment puts it that Iran has almost certainly embarked on an effort to acquire what might be called the precursor infrastructure for a nuclear weapons project. There have also been several estimates about how long it would take Iran to produce a bomb. Cordesman estimated, in 1997, this time gap to be between five to ten years. [94] The Rumsfeld Report says: "if Iran were to accumulate enough fissile material from foreign sources, it might be able to develop a nuclear bomb in only one to three years". [95]

Syria, under pressure since the American-brokered negotiations came to a halt, has made a steady effort, over the last years, to acquire weapons of mass destruction. They are means to deter Israel and to counter the latter´s presumed nuclear weapons. It is believed to have one of the largest, most advanced chemical weapons stockpiles in the region, initiated in the

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[91] Phillips, *op. cit.*, p. 6; A. Cordesman, *Iran´s Military Forces in Transition: Conventional Threats and Weapons of Mass Destruction* (Westport: CT, Praeger, 1999), p. 356.
[92] DoD, *2001 Proliferation*, p. 36.
[93] Eisenstadt, *op. cit.*, pp. 14-6.
[94] Cordesman, *op. cit.*, p. 94.
[95] *Rumsfeld Report*.

early 1970s. [96] It has already a stockpile of nerve agent Sarin and, more recently, it has produced the more effective VX nerve agent. Weaponised agents include blister (mustard) and nerve, which can be delivered in aerial munitions, artillery and rocket shells. Some Western analysts believe that, by the late 1980s, Syria had armed many of its modern missiles, including SCUDs, with chemical warheads. [97] Syrians are also working on a new biological programme.

As far as missiles are concerned, Syrians have several hundred SCUD B, SCUD C and SS-21 SRBMS, and they are seeking longer-range missiles, possibly from North Korea. All of Syria´s missiles are mobile [98] and can target Israel and part of Iraq, Jordan and Turkey. [99]

Libya´s quest for WMD capabilities is strongly related to the political profile of Col. Qadhafi and his aspirations to leadership of the Arab nation. The aspect that has attracted the greatest media interest is Qadhafi´s effort to develop a nuclear capability, which goes back to the early 1970s. Libya unsuccessfully attempted to purchase a nuclear weapon from China in 1975 and from India in 1978. Subsequently, it tried to negotiate nuclear technology sharing arrangements with Pakistan, the Soviet Union, Argentina, Brazil and Belgium. [100] Tripoli settled instead on helping finance the Pakistani nuclear programme and contributed “yellow cake” nuclear fuel for Pakistan´s reactors. [101]

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[96] M. Zuhair Diab, “Syria´s Chemical and Biological Weapons: Assessing Capabilities and Motivations”, *The Nonproliferation Review*, Fall 1997.
[97] “Syria's Scuds and Chemical Weapons”, CNS Issue Brief on WMD in the Middle East (http://cns.miis.edu/research/wmdme/syrscud.htm); Ahmed S. Hashim, "Case Study 1: Syria," *The Deterrence Series: Chemical and Biological Weapons and Deterrence* (Alexandria, VA: Chemical and Biological Arms Control Institute, 1998), p. 8.
[98] DoD, *op. cit.*, p. 45.
[99] Scott Peterson, “Israel and Foes to Upgrade Arms”, *The Christian Science Monitor*, 30 July, 1997.
[100] Clyde R. Mark, “93109: Libya”, *CRS Issue Brief*, updated 19 December, 1996, p. 4.
[101] Barry R. Schneider, *Radical Responses to Radical Regimes*, IISS, McNair Paper no. 41, May, 1995

The Libyans possess a Soviet-supplied nuclear research facility at Tajura that is under IAEA safeguards. The programme has stagnated because of lack of funds and foreign assistance and of a weak technological infrastructure. However, there are reports indicating Qadhafi is attempting to recruit foreign scientists to continue the nuclear programme. In 1999, Tripoli and Moscow resumed discussions on the Tajura nuclear centre and on a potential power reactor deal, which could provide Libya with opportunities to conduct weapons-related research. [102]

To compensate for those failures, Libya has invested in a chemical programme. J. Sinai says that country "is believed to possess two of the largest CW production complexes ever constructed in the developing world".[103] Prior to 1990, the Libyans produced about 100 tons of chemical agents (mustard and nerve agent) at the Rabta complex. According to the official Libyan version, the plant was allegedly closed due to a fire and, later, converted to a pharmaceutical facility. Chemical efforts continue, this time, at an underground facility in Tarhunah, although the pace of activity has slowed down. This is probably due to increased international attention and the disruption, by Western governments, of the procurement network that served the project. Tripoli also has a biological weapons programme, which is in a primitive phase due to the lack of a competent scientific and technical base.

Libya possesses a dated SCUD B missile force, which suffers from poor maintenance, and it is believed that their operational status is questionable. Libyans have invested in extending the range of their SCUD B surface-to-surface missiles to deliver chemical weapons. Libya´s attempts to develop indigenous missile production have not significantly progressed so

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(http://www.ndu.edu/inss/macnair/mcnair41/m41cont.html). See chap. "The Spread of Weapons of Mass Destruction".

[102] DoD, *op. cit.*, p. 46 and A. Cordesman, *Weapons of Mass Destruction in the Middle East: Regional Trends, National Forces, Warfighting Capabilities, Delivery Options, and Weapons Effects* (Washington, D. C.: CSIS, 21 January, 2001), p. 22.

far, due to the sanctions imposed on Qadhafi´s regime. There are, however, reports that Tripoli has received the technology for the development of the North Korea No Dong MRBM missiles.[104]

Also worth mentioning are WMD capabilities and programmes of Saudi Arabia, Egypt and Algeria. Saudi Arabia has between 30 and 60 Chinese DF-3 missiles, which have a 2,800-km range. They have "the longest range by far of any missiles sold in the developing countries", but they are inaccurate. [105]

Egypt has a chemical weapons programme with a probable stockpile of mustard and nerve agents. It was the first Arab nation to use mustard gas in the Yemeni civil war. There are conflicting reports on Egypt´s possession of biological weapons. Israeli experts say Egypt appears "to have developed several natural pathogens and toxins as warfare agents and has recently taken the first steps to acquire a capability for the genetic engineering of microbial pathogens". [106]

Egypt has around 100 SCUD B with 300-km range. It is continuing with both indigenous and Eastern-based efforts to develop its missile arsenal. Cairo has been aided by such countries as China and North Korea. The programmes include the conversion of SCUD B to longer-range SCUD C missiles, [107] as well as secret efforts with Pyongyang to develop IRBM tipped with chemical warheads. In 1999, the U.S. State Department sanctioned three Egyptian companies for participating in North Korean exports of SCUD technology and associated equipment to Egypt. [108]

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[103] Joshua Sinai, "Libya´s Pursuit of Weapons of Mass Destruction", *The Nonproliferation Review*, Spring-Summer, 1997, p. 92.
[104] DoD, *op. cit.*, p. 47, Sinai, *op. cit.*, p. 96.
[105] Shahram Chubin, *Eliminating Weapons of Mass Destruction: The Persian Gulf Case*, The Henry L. Stimson Center, Occasional Paper no.. 33, March, 1997, p. 20.
[106] Dany Shoham, "Chemical and Biological Weapons in Egypt", *The Nonproliferation Review*, Spring-Summer, 1998, p. 56.
[107] Seth Carus and Dov Zakheim, "North Africa/Israel", Appendix III; Unclassified Working Papers, Rumsfeld Report.
[108] Cordesman, *op. cit.*, pp. 23-24.

In 1991, newspaper reports alleged that China was helping Algeria acquire a nuclear weapons capability at its Oussera reactor site and also advising on how to design a nuclear warhead for a SCUD B delivery system.[109] In 1996, Algeria signed a comprehensive IAEA safeguards agreement to provide for IAEA inspections of all of Algeria´s nuclear facilities and IAEA technical assistance to Algeria. Algeria is expanding the civil nuclear research programme, but the direction of that programme is uncertain, especially given the instability reigning in the country. [110] Algeria has a significant military capability with Kilo submarines and 10 SU-24 bombers and the largest military in North Africa after Egypt. [111]

III. 2. WMD and War-fighting Concepts/Options

WMD are viewed not only as a deterrent, but also as a "force multiplier". For states with numerical and conventional inferiority, advanced weapons systems are both an equaliser and they assure a potential advantage over most of its adversaries. They offer the "means of seeking continued superiority, while it offers poorer or «challenger» states a cheaper way of trying to equalise the military balance". [112]

Except for Israel and Egypt, most countries in the Middle East lack a well-defined military doctrine that provides some rationale to their military build-up and scenarios for the use of WMD. Lewis describes military doctrine as "situational" and "amorphous"; [113] Cordesman says: "war fighting concepts are likely to lack clear structure and be highly volatile in terms of enemy, targets and crisis behaviour".[114] A further concern is the suspicion that WMD may be used in unpredictable circumstances and by less than

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[109] See the report on Algeria by the Federation of American Scientists (FAS) (http://www.fas.org/irp/threat/missile/algeria.htm)
[110] Cordesman, *op. cit.*, p. 15.
[111] Lesser and Tellis, *op. cit.*, p. 46.
[112] Cordesman, *Weapons of Mass Destruction in the Middle East*, 1991, p. 16.
[113] Lewis, *op. cit.*, p. 83.
[114] Cordesman, *op. cit.*, p. 2.

rational leaders. Cordesman shares the view that “the history of the region is filled with miscalculations, erratic behavior, and risk taking ... single rulers or small groups of ruling elites that may choose to escalate in ways that are far less conservative than Western planners would escalate under similar conditions”.[115]

It must also be borne in mind that there have been significant instances of the use of chemical and other WMD weapons, episodes that motivate and legitimate further acquisition of WMD capabilities. The fact that they have been extensively used as “normal weapons” (especially during the Iran-Iraq War and the 1991 Gulf War) has an important “demonstrating” effect, highlighting the usefulness of those weapons in military confrontations in the Arab world. Since 1945, Egypt, Iran, Iraq, and Libya have carried out chemical weapons attacks on neighbours in the region. Egypt was the first nation in the region to employ chemical agents in the 1963-67 war in Yemen.[116] During the Iran-Iraq war (1980-88), Iraq made extensive use of chemical weapons. Iran seems to have employed chemical agents on a limited scale during that war as well. [117] Iraq also wreaked deadly CW attacks on unarmed Kurdish civilians during the 1980s. Libya used chemical agents in 1987 against Chadian troops.

Egypt, Iran, Iraq, Libya, Syria, and Yemen have used ballistic missiles in the region. In the aftermath of the U.S. air attack on Libya in April, 1986, Libya launched an unsuccessful SCUD missile against the Coast Guard-operated LORAN station on the Italian island of Lampedusa. During their "War of the Cities" in 1988, Iraq and Iran fired hundreds of ballistic missiles in indiscriminate attacks on respective urban areas. Egypt, Iran, Iraq, Israel, Syria, and the United States have used cruise missiles in Middle East

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[115] A. H. Cordesman, *Transnational Threats from the Middle East: Crying Wolf or Crying Havoc?* (Carlisle, PA: US Army War College–SSI, 1999), p. 96.

[116] Hajjar, *op. cit*., p. 6; Michael Barletta e Amin Tarzi, “Challenges in the Middle East to Nonproliferation Regimes”, in M. Barletta e Amy Sands (ed.), *Nonproliferation Regimes at Risk*, CNS Occasional Paper, no. 3 (www.cns.miis.edu/pubs /opapers/op3/bartar.htm).

conflicts. The United States has made the most extensive use of cruise missiles in the region, launching limited attacks on Iran and the Sudan, and hundreds of missiles against Iraq since 1991.

Furthermore, a crisis control regime has not been established in the region, nor have traditional adversaries been inclined to fashion confidence-building arrangements to stabilise future crisis situations. The weakness of the non-proliferation regime and the multiple sources of potential conflict in the Middle East generate fears about the reckless use of WMD weapons.

A combination of factors, including Iraq´s nearly successful programme to deploy nuclear weapons in contravention of the Nuclear Proliferation Treaty (NPT) and the International Atomic Energy Agency´s safeguards, its refusal, since late 1998, to allow UN inspectors in Iraq, and the initial crisis over North Korea´s refusal to adhere to the NPT regime, to which it is also a signatory, have effectively eroded confidence in the ability of the regime to detect, let alone deter, acquisition of a military nuclear capability.

IV. Strategic Consequences of WMD Proliferation

IV. 1. Potential Threat Scenarios

In the second phase of its work programme, the DGP examined the political and military consequences for the Alliance of WMD arsenals in Europe´s vicinity and adjacent areas. It explored risk and threat scenarios to NATO countries derived from the threat or use of WMD in the hands of

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[117] Falkenrath et al., *op. cit.*, pp. 226-7.

hostile states or non-state entities. Three hypothetical scenarios were used: threats against Alliance territory, in particular, targeting its populations; threats to the Alliance´s ability to intervene in regions of vital interest, affecting NATO´s ability to deploy forces and combat operations; threats to international missions in which NATO forces may de involved. The DGP considered how those contingencies might be affected by WMD and reached the following conclusions:

- In the foreseeable future, WMD are more likely to be used against deployed NATO forces. The Alliance should thus concentrate on protecting those forces involved in regional contingencies, like UN-mandated peace-keeping, peace-making or peace-enforcement, the military enforcement of trade sanctions, and embargoes. NATO forces will be most vulnerable when entering the region of operations, especially when they are concentrated at ports and airfields.
- WMD do not give their possessors the ability to defeat NATO forces in classic military terms. They are understood as a means of overcoming NATO´s conventional superiority. They can give WMD users the ability to hold key targets at risk, which would constrain NATO´s military decision-making and restrict military options available.
- More specifically, WMD can have a direct impact on operational outcomes by disrupting NATO coalition cohesion or deployment capabilities.
- They can alter the military balance if WMD use succeeds in degrading the operating capability of NATO-deployed forces.

European troops, like those of the United States, are increasingly being deployed overseas (for peacemaking and peacekeeping missions and crisis response operations, in general) where they might be increasingly threatened by ballistic and cruise missiles holding conventional, nuclear, chemical or biological warheads. WMD would be used to coerce and deter

the United States and/or a Western coalition from responding to aggression, such as the one Iraq initiated against Kuwait in 1990.

At a minimum, the threat of use of WMD would be played as a gambit to undermine political support for forward deployment of Allied troops, complicating coalition-building within and outside the region. Due to the risks involved, perceived vulnerability of countries exposed to WMD will complicate cooperation among Allies and render more difficult decisions regarding intervention beyond Europe. [118] Lesser and Tellis point out that "the *potential* for retaliation on NATO territory, possibly from unexpected quarters, will influence the basic, initial calculations on the wisdom of intervention...Under these conditions, serious disagreements among allies may emerge about the choice of instruments and targets, based on varying exposure to WMD attack". [119]

Those threats could also exploit Allied/U.S. dependence on regional allies for power projection in peace operations or in a war contingency. In an intervention abroad, Allied troops would have to rely on military bases and/or civilian facilities. A coercive threat to or actual attack on the regional partner and/or the staging area could compromise the overall prosecution of the campaign. A NBC attack against a third country could equally cause the disruption of an Allied military coalition.[120]

J. Krause devised a host of other scenarios in which NATO allies could be faced with the employment of WMD. They are varied and may be encapsulated in the following categories:

- Direct attacks targeting NATO territory and population;
- Risks from shifts in regional power balances brought about by the acquisition of WMD means;

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[118] Lesser and Tellis, *op. cit*., p. 33.
[119] *Ibid.*, pp. 27-28. Emphasis in the original.
[120] Falkenrath et al., *op. cit*., p. 220, 225.

- Regional instabilities, which, coupled with WMD proliferation, can endanger Western security;
- Destabilising consequences of the erosion of international norms or the undermining of regional security systems;
- The risk of accidents involving WMD or their accidental use;
- Use of WMD as tools of terrorism. [121]

As far as the first scenario – direct military attacks against NATO states – is concerned, current WMD capabilities and, especially those under development in the Mediterranean area, constitute a potential threat to NATO countries. If intelligence assessments are indeed correct, the capabilities already exist to strike at European territory.

- Iran currently possesses SCUD missiles with a range of 500 km, which could threaten the eastern third of Turkey. It is developing a Shahab-3 missile, based on the North Korean No Dong, with a range of 1,300 km, which would threaten most of Turkish Anatolia. Iran may also be interested in purchasing North Korean Taepo Dong missiles. A Taepo Dong 1 (known by Iran as a Shahab-4) could reach all of Turkey and Greece; a Taepo Dong 2 (Shahab-5) could threaten all 17 European allies. In parallel, Iran is pursuing programmes to develop NBC weapons, although the nuclear programme would require extensive foreign technical assistance or the illicit acquisition of fissile material to produce a nuclear warhead.

- Iraq likely retains a limited number of SCUD-variant SRBM missiles with a range of 650 km, capable of striking the eastern half of Turkey. Iraq is believed to be developing technological improvements to its short-range missiles that could be applied to future longer-range missile programmes.

[121] Joachim Krause, “Proliferation Risks and Their Strategic Relevance: What Role for NATO?”, *Survival*, vol. 37, no. 2, Summer, 1995, p. 136.

Iraq is reportedly continuing its programme to develop NBC weapons, particularly given that United Nations weapons inspections have been suspended since 1998. Iraq is not expected to have a nuclear capability in the next five years, but it could greatly accelerate the process if it is able to obtain fissile material.

- Syria also has a SCUD missile arsenal with a range of 500 km, which could reach most of Turkey. Syria possesses chemical weapons and could produce biological weapons, but it is not pursuing a nuclear programme.

- Libya is looking into buying the existing North Korean No Dong missile, with a range of 1,300 km, which could threaten much of Southern Europe, including all of Greece, most of Italy, the western half of Turkey, and the Mediterranean coasts of Spain and France, including the Balearics and Corsica. Libya's existing SCUD missiles have a range of 300 km, which could reach Crete, though their operational status is questionable. Libya probably has a chemical weapons programme, and is believed to be developing biological weapons. [122]

- Algeria has some long-range strike aircraft with which it can strike much of the Iberian peninsula and reach as far as southern France and Italy. They could conceivably carry an Algerian nuclear weapon, if the regime persists with the nuclear development programme. [123]

Proliferation efforts are concentrated in a few Mediterranean states, some of which, like Iran, Iraq and Libya, are of special concern. Those countries

[122] Colin Kenny, *Missile Defence and Other Challenges to Alliance Unity,* draft general report, NATO Parliamentary Assembly, International Secretariat, 5 April, 2001 (http://www.naa.be/publications/comrep/200/au-095-e.html).

have an anti-Western track record and have advocated anti-Western policies. Some of them have espoused, in particular, anti-American policies and, in the process, have attacked American allies in the Middle East, like Israel. They have also posed a threat to the West, sponsoring terrorism against Western targets and/or on Western soil. Of all Arab states, Libya was the only one to have used missiles against Western targets – it fired on the Italian island of Lampedusa following the U.S. raid on Tripoli in 1986.

The southern flank of the Alliance – from Portugal to Turkey – would be especially vulnerable to attack by medium and long-range missiles emanating from those countries. Large portions of the southern flank are already within range of aircraft deployed in North Africa. The most serious threat is faced by Turkey, which is fully exposed to air and missile risks. [124]

IV. 2. Evaluating the Threat

Having made a crude *tour d´horizon*, other factors must be taken into account. Indeed, the very fact that the capabilities described above exist, and that some countries are actively engaged in pursuing WMD weapons, does not translate into a real and present danger to NATO states. The following observations should be taken into account to balance the threat analysis:

- Some states in the Mediterranean (Algeria, Libya and Syria) cannot successfully strike against major strategic and population centres in Western Europe. They possess short-range missiles of the SCUD type or Frog type in small quantities that are outdated and could hardly cross the Mediterranean.
- Most of the missiles deployed in the Mediterranean area do not have a range that exceeds the 600-km range. They are basically SCUD A,

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[123] Lesser ant Tellis, *op. cit*., pp. 47-48.
[124] *Ibid.*, p. 20.

SCUD B and SCUD C versions, which have undergone improvements. [125]

- Building long-range missiles poses a technological challenge that is hard for those states to overcome. It requires a sophisticated scientific and technological infrastructure and huge financial investment. A report by the Federation of American scientists, focusing on North Korea, highlights the technological threshold that state still has to cross: "an untested North Korean Taepo Dong 2 missile armed with a nuclear warhead has a maximum range of 6,000 km and could only strike Alaska. FAS indicates that North Korea would have to conduct nuclear tests to develop a lighter-weight nuclear warhead that would allow the Taepo Dong 2 to reach any of the lower 48 states, or substitute a chemical or biological warhead". [126]

Additionally, it must be borne in mind that ballistic missiles are extremely expensive to produce. Most of those that Mediterranean states possess are unreliable and inferior, in terms of effectiveness, to aircraft and for delivering most any kind of weaponry. The same level of technological sophistication applies to biological weapons, which are exceedingly difficult to develop, deploy and control. The process of weaponisation is elaborate: long-term storage of lethal organisms in warheads or bombs is difficult; explosive methods of dispersion may, moreover, destroy the organisms. As far as chemical agents are concerned, they also require a warhead of enormous sophistication since it cannot slam into the ground, but must disperse its contents in a spray at a very low altitude. [127]

The October, 1997 Mediterranean Special Group report judges that the threat from WMD in the Mediterranean to NATO countries has been greatly exaggerated. The rapporteur cautions against the temptation to overstate the risk and, by emphasising it too much, allowing it to become

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[125] Krause, *op. cit.*, pp. 138-9.
[126] Colin, *op. cit.*
[127] John Mueller and Karl Mueller, "The Methodology of Mass Destruction: Assessing Threats in the New World Order", in Eric Herring (ed.), *Preventing the Use of Weapons of Mass Destruction* (London: Frank Cass, 2000), pp. 166-169.

a real prospect. He says that, with the exception of Turkey, NATO nations "have no particular reason to fear a ballistic or other threat from a southern country because the performance of the weapons available to Iran, Iraq, Libya or Syria will still be relatively poor in the 10-to-15-year timeframe..."[128]

It is of no less significance to consider that the logic of deterrence, which worked during the Cold War, still holds. There is not, for the moment, any reason why it would not prevail, tempering the reasoning of military leaders. In fact, it seems unlikely that even the most reckless Middle Eastern power would take the bold risk of directly attacking any NATO nation, given the risk of massive retaliation. No Middle Eastern state can disregard the fact that any use of a biological or nuclear weapon that produced massive casualties could trigger devastating conventional strategic strikes or even the use of a nuclear counter-attack that would destroy their countries.

Strategic and political analysts concur at least on one point: these weapons are more likely to be used in a South-South context. [129] It is in this context that Middle Eastern and North African countries face real military threats. The resort to military force has been frequent and recent history illustrates how some states, like Egypt and Iraq, are capable of resorting to unconventional means to gain supremacy in regional wars.

There are a number of contexts where those weapons could be used. That would be, particularly, in the context of inter-state conflicts and the Arab-Israeli conflict, should it deteriorate even further. In the Maghreb, regional competition between Algeria and Morocco is acute and involves the contest over the Western Sahara. Libya is a permanent source of instability to its neighbours, especially Egypt and Tunisia. Egypt itself plays a delicate balancing act due to its role as moderator and supporter of the American-

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[128] Pedro Moya , Mediterranean Special Group - NAA, *NATO´s Role in the Mediterranean*, October, 1997, AP 245, GSM (97) 9, p. 2.

[129] See, for instance, Lesser and Tellis, *op. cit.*, p. 19; Roberto Aliboni, "European Union Security Perceptions and Policies Towards the Mediterranean", in Stephen J. Blank (ed.), *Mediterranean Security* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 1999), p. 126.

driven peace process. Egypt might be exposed to retaliation from Arab states due to its support of Western/American actions.

Syria is a declared Israel enemy and its support for terrorist groups (the Lebanese Hizballah) opposed to the peace process are serious causes for a confrontation with Israel. Syria is a traditional rival of Iraq, with which it has rivalled for supremacy in the Levant. Its competition with Turkey and support for the PKKK (Kurdish Workers Party) in Turkey expose it to retaliation from Ankara.

In the Gulf, Iran and Iraq´s race for arms is driven by a long bid for regional hegemony. Besides mutual deterrence and leverage in regional/Arab politics, the arsenals of those states are created in view of challenging Israel´s monopoly on nuclear possession.

In general, the rationale for arms build-up is intricately linked to internal politics, regional security concerns and leadership aspirations – the search for prestige – more so than to the West. The exception to this pattern is the case of Iran and Iraq, and Libya, to a lesser extent. Those countries are traditionally weary of outside intervention because in the past they have been the targets of Western (generally American) interference and/or military intervention. WMD weapons would serve to deter U.S., eventually, Allied intervention in the Persian Gulf or Libya.

While too much attention has centred on long-range missiles, state-sponsored terrorism using WMD is more likely than the use of an intercontinental ballistic missile to deliver WMD to a target in a Western country. In fact, a proliferator would probably be more inclined to use unconventional delivery means or a terrorist proxy in order not to be identified. [130] Intelligence reports stress this new fact – that “rogue states” will use these groups to carry out their insurgent policies through loose teams of deniable political and religious fanatics: “A trend may be developing regarding a state´s use of terrorists to conduct a proxy war against the United States. Terrorist groups offer the sponsoring state a deniable method

[130] Cordesman, *op. cit.*, p. 98.

to attack primary U. S. interests. In turn, sponsoring states would provide terrorist groups with funding, access to weapons and advanced technologies, intelligence, target planning support, logistics support, and secure communications". [131]

Indeed, as R. Betts explains: "Iraq, Iran, or North Korea will not be able to deploy intercontinental missiles for years. Nor, if they are strategically cunning, should they want to. For the limited number of nuclear warheads these countries are likely to have, and especially for biological weapons, other means of delivery are more easily available. Alternatives to ballistic missiles include aircraft, ship-launched cruise missiles, and unconventional means, such as smuggling..."[132] A nuclear device could be easily concealed in a suitcase to be transported in a ship that would carry it to its target destination, than placed atop an ICBM.

America´s military superiority and interventionism in the international scene contributes to an increased likelihood of a terrorist attack. Osama bin Laden, the fundamentalist terrorism financier, seeks to punish the United States for what he sees as Washington´s hegemonic policies in the Middle East. Bin Laden´s goals are the overthrow of the Saudi Arabian monarchy, which he believes, is supported by the United States, and to expel American troops from the Arabian Peninsula. Since the end of the Gulf War, the expanded American military presence in the Arabian Peninsula has become visible, raising controversy among many Saudis who think it is *haram* (forbidden by the Islamic religious law) to have the infidel soldiers stationed in the country. American troops have become the main targets of the Islamic

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[131] OPSEC Support Staff, *Intelligence Threat Handbook*, Section 4, "Terrorist Intelligence Operations"; see also Ian O. Lesser et al., *Countering the New Terrorism* (Santa Monica, CA: RAND, 1999), p. 37.

[132] Richard K. Betts, "The New Threat of Mass Destruction", *Foreign Affairs*, vol. 77, no. 1, January-February,, 1998, p. 36.

radicals in what they regard as a “holy war” against the corrupt Saudi ruling family. [133]

A scenario which should receive great attention on the part of Allied policymakers is that of radical or violent political change, especially in the Maghreb, but also in Saudi Arabia or Egypt, resulting in the coming to power of fundamentalist or other type of anti-Western political forces. A case in point is Algeria, where extremist fundamentalist groups are waging a war to overthrow the regime. The potential advent of a radical Islamic regime in Algeria, with its nuclear ambitions and missile interests, could accelerate WMD acquisition and worsen the outlook for their use in times of crisis. [134] Instability in Algeria and in North Africa, in general, carry with it enormous consequences for European countries, especially if these rivalries are carried over into the strategic camp. An Islamist regime in Algeria, with an anti-Western penchant, could, in turn, create the setting for broader WMD-based alliances in the Middle East (Algeria-Syria-Iran, for instance). [135]

The case of Saudi Arabia is also relevant, although the possibility of an overthrow of the regime is, for the moment, remote: it has the Chinese CSS-2 missiles, which, if launched from the extreme northwest of the country, could reach targets in the Balkans and most of Italy. If this arsenal were to fall into the hands of Muslim extremists, this could present Western policymakers with a daunting strategic scenario. [136]

Of all Alliance states, Turkey is the one that is exposed to very serious threats emanating from Iraq, Syria, and, to a lesser extent, Iran. The prospect of the revival of Iraq, with the reconstitution of its military arsenal, is a source of concern for Turkey. Turkey played a prominent role in the

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[133] Maria do Céu Pinto, “Some US Concerns Regarding Islamist and Middle Eastern Terrorism”, *Terrorism and Political Violence*, vol. II, no. 3, Autumn 1999.
[134] Lesser and Tellis, *op. cit.*, p. 23.
[135] *Ibid.*, p. x.
[136] J. Krause “The Proliferation of Weapons of Mass Destruction: The Risks for Europe”, in Yves Boyer, *Europe and the Challenge of Proliferation*, International Security Studies, WEU, Chaillot Paper Series, no. 24, May, 1996 (https://wwwc.cc.columbia.edu/sec/dlc/ciao/wps/boy01/boy01/html).

Coalition operations against Iraq. Turkey also faces long-term security problems with its other Arab neighbour: Syria. In the case of Syria, the tensions are based on persistent Syrian territorial claims on Antioch, friction over access to the rivers Tigris and Euphrates and, in particular, the claim that Turkey´s Southeast Anatolia Project will severely restrict the downstream flow.

Turkey, for its part, accuses Syria of providing continuing support for the PKKK, including training bases in the Syrian-controlled Bekaa Valley, and has reasons to fear Syria´s land and air forces. Because of its pro-Western stance, as demonstrated in the Gulf War, and support for Western and Israeli positions, Turkey´s territory is very vulnerable to missile attacks from the neighbours with which it has active disputes. That explains why recently Turkey decided to deploy an anti-missile defence system with U.S. and Israeli help starting in 2002. [137]

The Alliance has reasons to be worried about the strategic consequences to its members of the proliferation of WMD. The WMD threat is evolving and is becoming more serious. In the near/medium term, developments in this area will probably present some important risks to the Alliance. NATO has begun to take additional precautions to protect NATO members and to provide greater reassurance and deterrence against these risks. Besides the overhaul of Alliance and national means proposed by the DGP, European nations have become interested in theatre missile defence (TMD) capabilities in recent years. NATO is conducting a TMD study that will develop an Alliance-wide TMD requirement by 2004. Additionally, the United States and several other NATO countries are developing various TMD systems to protect against short-range missiles. [138]

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[137] “Israel, Turkey, U.S. Agree to Launch Missile Cooperatiion”, Middle East Newsline(wysiwyg://7/http://www.menewsline.com/stories/2001/june/06_20_3.html), p. 1 of 1.

[138] See Kenny; TMD comprises defences against anything from short-range threats against troop concentrations, to theatre-wide systems that aim to protect a given territory against all missiles with a range of less than 3,500 km, p. 4.

ANNEX I

MAJOR MASS DESTRUCTION CAPABILITIES AND DELIVERY SYSTEMS IN THE MEDITERRANEAN

ALGERIA

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	2 reactors, 15 MW and 1 MW				Under IAEA safeguards Acceded to the NPT on 1/12/1995 Signed CTBT on 10/15/1996
Chemical	Possible development, but no evidence of deployment				CWC signed on 1/13/1993 and ratified on 8/14/1995
Biological	Basic research effort, but no evidence of production capabilities				BTWC not signed
Ballistic missiles	None				
Cruise missiles	SS-N-2B STYX	50 Km	513 Kg	Radar guided	Anti-ship missiles
Aircraft	~ 20 SU-24 ~ 40 MiG-23 BN	900Km 700 Km	8,000 Kg 3,000 Kg	narrow narrow	All-weather medium bomber Clear-weather fighter-bomber

LIBYA

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	One 10 MW reactor				Under IAEA safeguards

					NPT ratified on 5/26/1975 CTBT not signed
Chemical	100+ metric tons of nerve and blister agents				CWC not signed
Biological	Basic research effort, but no evidence of production capabilities				BTWC ratified on 1/19/1982
Ballistic missiles	100+ SCUD B ? SCUD C SS-21 Al Fatah	300 Km 550 Km 70 Km 950 Km	985 Kg 500 Kg 480 Kg 500 Kg	~ 1 Km n.k. n.k. n.k.	 Under development
Cruise missiles	SS-N-2C STYX OTOMAT Mk1 AM-39 Exocet	85 Km 80 Km 48 Km	513 Kg 210 Kg 165 Kg	Radar guided “” “”	Anti-ship missile “” “”
Aircraft	~ 6 SU-24 ~ 40 MiG-23 BN ~ 40 Mirage 5 ~ 40 SU-22 6 TU-22	900Km 700 Km 700 Km 600 Km 1600 Km	8,000 Kg 3,000 Kg 4,000 Kg 3,500 Kg 4,000 Kg	Narrow Narrow Narrow Narrow Medium	All-weather medium bomber Clear-weather fighter-bomber Fighter bomber Fighter bomber Medium bomber

EGYPT

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	Two reactors, 22MW and 2 MW				Under IAEA safeguards Acceded to the NPT on 2/26/1981 Signed CTBT on 10/14/1996
Chemical	Probable stockpile of mustard and nerve agent				CWC never signed
Biological	Possible availability of BW				BTWC signed on 4/10/1972, but not ratified
Ballistic missiles	100+ SCUD B ~ 90 “Project T” ? SCUD C Vector (under development)	300 Km 450 Km 550 Km 1,200 Km	985 Kg 985 Kg 500 Kg 450-1,000Kg	~1 Km n.k. n.k. n.k.	
Cruise missiles	AS-5 HY-2 Harpoon RGM-84 OTOMAT Mk1 Exocet AM-39 SS-N-2A STYX	400 Km 95 Km 120 Km 80 Km 48 Km 43 Km	1,000 Kg 513 Kg 227 Kg 210 Kg 165 Kg 513 Kg	Radar guided “” “” “” “” “”	Anti-ship missile “” “” “” – Mk2 (range 160 Km) in acquisition Anti-ship “”
Aircraft	~ 160 F-16 A/B/C/D 32 F-4E Phantom 18 Mirage 2000 E ~ 50 Mirage 5	750 Km 750 Km 700 Km 700 Km	5,000 Kg 6,000 Kg 4,000 Kg 4,000 Kg	Narrow Narrow Narrow Narrow	fighter-bomber “” “” “”

SYRIA

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	One research reactors				Under IAEA safeguards Ratified the NPT on 9/24/1969 CTBT not signed
Chemical	Estimated CW stockpile in hundreds of Tons, including Sarin, VX and Mustard gas				CWC not signed
Biological	weapons research effort, but no evidence of production capabilities				BTWC signed on 4/14/1972, but not ratified
Ballistic missiles	120 SCUD C 200 SCUD B 200 SS-21 M-9	550 Km 300 Km 70 Km 600 Km	500 Kg 985 Kg 480 Kg 500 Kg	n.k. ~ 1 Km n.k. n.k.	 Under development
Cruise missiles	SS-N-2C STYX SS-N-3B SEPAL	80 Km 450 Km	513 Kg 1,000 Kg	Radar guided “”	Anti-ship missiles “”
Aircraft	~ 20 SU-24 ~ 40 MiG-23 BN ~ 90 SU-22	900Km 700 Km 600 Km	8,000 Kg 3,000 Kg 3,500 Kg	narrow narrow narrow	All-weather medium bomber Clear-weather fighter-bomber Fighter bomber

ISRAEL

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	2 reactors, 150 MW and 5 MW				Under IAEA safeguards NPT not signed Signed CTBT on 9/25/1996
Nuclear weapons	100 – 200 nuclear warheads. May include thermonuclear weapons				
Chemical	Production capabilities for mustard and nerve agents				CWC signed on 1/13/1993
Biological	Extensive research effort, production capabilities				BTWC not signed
Ballistic missiles	~ 50 Jericho-2 ~ 50 Jericho-1 MGM-52 Lance Jericho-3	1,500 Km 500 Km 130 Km 4,800 Km	1,000 Kg 500 Kg 450 Kg 1,000 Kg	n.k. n.k. n.k. n.k.	Nuclear warhead Under development from Shavit SLV
Cruise missiles	Gabriel – 4 RGM/UGM-84 Harpoon Popeye-1 Popeye-3	200 Km 120 Km 100 Km 350 Km	500 Kg 227 Kg 395 Kg 360 Kg	Radar guided “” 3 m 2 m	Anti-ship missiles “” Air launched PGM “”
Aircraft	~ 25 F-15I 200 F-16 A/B/C/D ~ 50 F-4E	1,000 Km 750 Km 750 Km	8,000 Kg 5,000 Kg 6,000 Kg	narrow narrow narrow	All-weather fighter bomber fighter-bomber “”

IRAQ

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	Several nuclear projects and research activities				NPT ratified on 10/29/1969
Chemical	Probable availability of hundreds of chemical warheads for ballistic missiles, artillery and aircraft				CWC not signed
Biological	Probable production capabilities				BTWC ratified on 4/18/1991
Ballistic missiles	Ababil-100 Al-Samoud Ababil-50 ? SCUD B ? Al Hussein	150 Km 140 Km 50 Km 300 Km 650 Km	300 Kg 300 Kg 95 Kg 985 Kg 500 Kg	n.k. n.k. n.k. ~1 Km > 1 Km	Under development Tested In production Components Components
Cruise missiles	SS-N-2C STYX C-601 C-801 AM-39 Exocet	80 Km 95 Km 40 Km 48 Km	513 Kg 513 Kg 165 Kg 165 Kg	Radar guided “” “” “”	Anti-ship missiles “” “” “”
Aircraft	~ 100 SU-25, SU-20, MiG 23 BN, Mirage F-1 EQ				Clear-weather fighter-bombers

IRAN

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	2 reactors, 5 MW and 30 kW				Under IAEA safeguards NPT ratified on 2/20/1970 Signed CTBT on 9/24/1996
Chemical	Stockpile of cyanogen chloride, phosgene and mustard gas. Production of nerve agent				CWC ratified on 11/3/1997
Biological	Probable production of small quantities of agents				BTWC ratified on 8/22/1973
Ballistic missiles	200 SCUD B 150 SCUD C 25 CSS-8 Mushak Shahab-3 Shahab-4	300 Km 500 Km 150 Km 200 Km 1,000 Km 2,000 Km	985 Kg 700 Kg 190 Kg 500 Kg 700 Kg 1,000 Kg	~ 1 Km n.k. n.k. n.k. n.k. n.k.	 Under development “”
Cruise missiles	C-201 C-802 HY-2 RGM-84 Harpoon SS-N-22 AS-9 AS-11	150 Km 95 Km 95 Km 120 Km 110 Km 90 Km 50 Km	500 Kg 165 Kg 513 Kg 227 Kg 500 Kg 200 Kg 130 Kg	Radar guided “” “” “” “” n.k. n.k.	Anti-ship missiles “” “” “” “”
Aircraft	~ 30 SU-24 ~ 60 F-4 D/E ~ 60 F-5 E/F	900Km 750 Km 500 Km	8,000 Kg 6,000 Kg 2,000 Kg	narrow narrow narrow	All-weather medium bomber fighter-bomber fighter-bomber

SAUDI ARABIA

Systems	TYPE	RANGE	PAYLOAD	CEP	NOTE
Nuclear reactors	None				Acceded to the NPT on 10/3/1988 CTBT not signed
Chemical	None				CWC ratified on 8/9/1996
Biological	None				BTCW ratified on 5/24/1972
Ballistic missiles	~ 50 CSS-2	2,400 Km	2,500 Kg	n.k.	Two launch sites
Cruise missiles	RGM-84 Harpoon Sea Eagle OTOMAT Mk 2	120 Km 110 Km 80 Km	227 Kg 230 Kg 210 Kg	Radar guided “” “”	Anti-ship missiles “” “”
Aircraft	~ 70 F-15S ~ 40 Tornado IDS	800 Km 800 Km	8,000 Kg 8,000 Kg	Narrow narrow	All-weather fighter-bomber (deliveries underway) All-weather medium-bomber

Assessment criteria

All the information summarised in the charts comes from open sources.
Due to the secrecy and deception activities by states involved in WMD research or production, it is difficult to reach an exact assessment of their assets and capabilities.

Nonetheless, the cross examination of several different open-source yearbooks and strategic analyses, can provide a rough assessment of present availability of both weapons of mass destruction and main delivery means.
As far as the WMD are concerned, in the charts, there are listed only chemical weapons, biological and nuclear warheads. The so-called radiological weapons, as the munitions conceived for spreading radioactive materials in the air, are not comprised in the charts, because such systems, like many chemical agents used in agriculture, are not properly “weapons”, although they can be used in conflict.
The states with nuclear reactors, which are not under strict international safeguards, have the opportunity to obtain radioactive material from nuclear waste, thus, the capability to produce radiological weapons.
As far as the means of delivery are concerned, the technical specifications of several ballistic missiles are not known. This is because such national programmes are conducted in secret, and because there are often very few live firing tests from which it is possible to estimate the maximum range and accuracy (circular error probability – CEP).
The only well known and proven ballistic missiles is the SS-1 SCUD B, used in several conflicts in the Middle East and Central Asia. For the other systems, the technical data are obtained mainly through the analysis of structural design, plus the information about the technical and scientific knowledge available in the country.
Cruise missiles are usually anti-ship missiles; they can theoretically be modified to accommodate a nuclear, biological or chemical warhead. Their guidance systems are based on inertial navigation plus terminal radar homing, giving a final accuracy much greater than that of ballistic weapons.
The aircraft displayed in the charts are only those models conceived for carrying offensive air-to-ground weapons. In theoretical terms, every combat aircraft could be used for the release of air-to-ground weapons, but the lack of accurate navigation systems, attack radar and computers and specific training for the crews drastically reduce the usefulness of non-dedicated assets.
The range of aircraft is estimated as the normal combat radius, without in-flight refuelling, and with a HI-LO-HI profile. The payload expresses the maximum weight of weapons, external fuel and sensor that could be carried. The normal weapon load is usually much lower.

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ANNEX II

MAJOR INTERNATIONAL WEAPONS CONTROL REGIMES

Major Weapons Control Regimes

There are a number of international treaties, agreements, regimes, and informal arrangements that seek to constrain the spread of nuclear, biological, and chemical weapons and missiles as well as conventional weapons. Some address material/agents and equipment in general terms, while others are more specific. Some have led to explicit export-control arrangements, limiting the transfer of technologies, materials and equipment, while others contain broad prohibitions of

activities. All have varying degrees of participation and adherence. The agreements, in many cases, establish an international norm of behaviour that can be used to highlight aberrant actions.

NUCLEAR NON-PROLIFERATION TREATY (NPT)

The Treaty on the Non-Proliferation of Nuclear Weapons (NPT) went into effect in 1970 and is adhered to by over 170 nations. A fundamental objective of the NPT is to prevent the further spread of nuclear weapons. To this end, the nuclear weapons states (five had tested and manufactured nuclear weapons by the time the treaty was negotiated and available for signature) agreed not to transfer nuclear weapons or other nuclear explosive devices, and not to assist, encourage, or induce non-nuclear weapons states (NNWS) to manufacture or otherwise acquire nuclear weapons or other nuclear explosive devices. Each NNWS pledged not to receive nuclear weapons or other nuclear explosive devices, not to manufacture or otherwise acquire them, and not to seek or receive assistance in their manufacture. The treaty also obliged each NNWS party to the NPT to accept international safeguards through agreements negotiated with the International Atomic Energy Agency (IAEA). The intent of these safeguards is to prevent by deterring, via IAEA inspections, the diversion of nuclear material for nuclear explosive purposes. Nuclear material and specified equipment would be exported to NNWS only under IAEA safeguards.

An offshoot of the NPT, the Zangger Committee, which first met in 1971, maintains a list of nuclear exports that require IAEA safeguards as a condition of supply. The Committee is made up of 30 NPT members who export nuclear material and equipment.

The **Nuclear Suppliers Group (NSG)** reinforces the work of the Zangger Committee through an expanded set of controls and by potentially including non-NPT states that are nuclear suppliers. In April, 1992, the NSG approved a comprehensive arrangement to prohibit exports of some 65 dual-use items of equipment and materials to unsafeguarded nuclear activities and nuclear explosive programmes. It also agreed to a common policy not to engage in significant, new nuclear cooperation with any NNWS that has not committed itself to full-scope safeguards on all present and future nuclear activities.

COMPREHENSIVE TEST BAN TREATY (CTBT)

The CTBT was negotiated over a period of two-and-a-half years in the Conference on Disarmament (CD) in Geneva. It was opened for signature on September 24, 1996.

It prohibits any nuclear explosion, whether for weapons, or for peaceful purposes. The Treaty establishes an organisation to ensure implementation. It includes a Conference of States Parties, an Executive Council and a Technical Secretariat, which includes the International Data Centre. The Treaty includes a Protocol, which

details the International Monitoring System (IMS), On-Site Inspections (OSI) and Confidence-Building Measures.

BIOLOGICAL WEAPONS CONVENTION (BWC)

The 1972 Convention on the Prohibition of the Development, Production, and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (BWC), went into effect in 1975 and has been signed and ratified by over 135 parties. The BWC prohibits the development, production, and stockpiling of toxins or of microbial or other biological agents of types and in quantities that have no justification for prophylactic, protective, or other peaceful purposes. Also prohibited are the development, production, and stockpiling of weapons, equipment, or means of delivery designed to use such agents or toxins for hostile purposes or in armed conflict. The Convention does not provide a mechanism for controlling export of these items.

During the two decades since the BWC went into effect, there have been increasing concerns about biological weapons proliferation and the ability of the Convention to deter it. Efforts at periodic review conferences have centred on strengthening the implementation and effectiveness of the Convention. The Treaty, as written, has no verification measures. Although confidence-building measures have been approved, there is still concern whether verification could be effective. There is no existing BWC committee comparable to the Zangger Committee in the NPT. The Convention does not prohibit exchange of equipment, materials, or scientific and technical information for peaceful purposes.

The Second Review Conference, held in 1986 in an effort to reduce the occurrence of ambiguities, doubts, and suspicions and to improve international co-operation in peaceful biological activities, adopted voluntary measures to strengthen confidence in treaty compliance and to help deter violations.

Because of continuing concerns about proliferation, possible non-compliance of some parties, and the rapid and significant advances in biotechnology, the Third Review Conference, held in 1991, reaffirmed and extended the voluntary confidence-building measures. As a result of a mandate of the Third Review Conference, an Ad Hoc Group of Government Experts convened to identify, examine, and evaluate potential measures for verifying the provisions of the BWC from a scientific and technical viewpoint.

The Ad Hoc Group (also known as “Verification Experts”) assessed 21 potential off-site and on-site measures using six mandated evaluation criteria. They also considered some combination of measures. The group’s final report concluded that, because of the dual-use nature of nearly all biological-weapons-related facilities, equipment, and materials, and the huge overlap between prohibited and permitted purposes, no single approach could fulfil the mandated criteria for a stand-alone verification measure. Nevertheless, the group found that some measures, either singly or in combination, have the potential to strengthen the BWC by helping to differentiate between prohibited and permitted activities and, thus, to reduce ambiguities about compliance.

CHEMICAL WEAPONS CONVENTION (CWC)

The Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction [referred to as the Chemical Weapons Convention (CWC)] was opened for signature in January, 1993. Over 160 countries have signed the Treaty. It went into effect on 29 April, 1997.
The CWC bans the production, acquisition, stockpiling, and use of chemical weapons.
It charges each party not to develop, produce, or otherwise acquire, stockpile, or retain chemical weapons; transfer - directly or indirectly - chemical agents to anyone; use chemical weapons; engage in any military preparations to use chemical weapons; and assist, encourage, or induce, in any way, anyone to engage in any activity prohibited to a party of the Convention. Each Party undertakes, in accordance with the provisions of the Convention, to destroy the chemical weapons it possesses or that are located in any place under its jurisdiction; control, destroy all chemical weapons it abandoned on the territory of another Party, and destroy any chemical weapons production facilities it owns or possesses or that are located in any place under its jurisdiction or control.
Finally, each Party undertakes not to use riot control agents as a method of warfare.
The CWC provides for routine and challenge inspections to assist in the verification of compliance with the Convention. Routine inspections of declared facilities are mandated by the Convention. In accordance with CWC provisions, challenge inspections may be conducted at a facility where a Party suspects illegal activities.
The CWC does not include a specific list of controlled chemicals or equipment. It does contain an Annex on Chemicals in which are listed three “Schedules” of toxic chemicals and their precursors based on the threat they pose to the purpose and objectives of the CWC and the extent of their commercial use. The Verification Annex describes in detail restrictions on transfers of scheduled chemicals. Transfers of some chemicals to countries who have not ratified the Convention is prohibited by the CWC.

MISSILE TREATY CONTROL REGIME (MTCR)

The MTCR is neither a treaty nor an international agreement but is a voluntary arrangement among countries that share a common interest in arresting missile proliferation. The Regime consists of common export policy applied to a common list of controlled items. Each member implements its commitments in the context of its own national export laws.
The aim of the MTCR is to restrict the proliferation of missiles, unmanned air vehicles, and related technology for those systems capable of carrying a 500 kilogram payload at least 300 kilometres, as well as systems intended for the delivery of weapons of mass destruction (WMD).
The MTCR considers "missiles" to include: ballistic missiles, space launch vehicles (SLVs) and sounding rockets. Unmanned air vehicles (UAVs) include: cruise missiles, drones, UAVs, and remotely-piloted vehicles (RPVs).
The MTCR was originally concerned only with nuclear-capable delivery systems. In January, 1993, the Partners extended the guidelines to cover delivery systems capable of delivering all WMD (nuclear, chemical, and biological).

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