Armaments and Technology

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Introduction

The rapid advances in new weapons technology developments have become an intrinsic part of military weapons procurement and operations planning in the Middle East. These developments have given states greater strategic depth in the region, and at the same time has highlighted and reinforced the linkages among states, or subregions. The current danger is that most countries in the region will not accept any form of arms control until some form of a regional peace is fully established. This stems from the perception that nations in the region still consider military forces as the only viable source to achieve their policy objectives.

This approach, if perceived as the only alternative to preserving a regional security balance could give rise to an arms race and to a parallel proliferation of weapons of mass destruction (nuclear, biological and nuclear). Unless controlled in the very near future, an arms race could very well give rise to another military conflict with catastrophic human and environmental consequences, and not as some models-based on the U.S. Soviet case- lead to a relatively safe environment of mutual deterrence between states or group of states in the region.

The first section of this paper gives a short overview of the military developments and the subsequent introduction of new conventional weapons technologies, and how this could give rise to the proliferation of weapons of mass destruction that could be perceived to substitute for the deficiencies in military capabilities in one area or another.

The second section deals with the effects to the present ongoing Middle Peace Negotiations if the arms race is not controlled, and suggests an approach to the structural and operational (Confidence and Security Building Measures) aspects of arms control in the region.

Build-Up of New Weapons Technology In The Region

Even though three major high intensity Arab-Israeli wars took place before 1980, we can safely assume that by the end of 1979 new weapons technology systems started to enter the region. In June 1979 the first air-to-air battle between Israeli F-15As and Syrian MiGs took place over Lebanon in which 4 MiGs were downed. Late 1979 another 7 MiGs were shot down. Early February of 1981 a Syrian MiG-25 Foxbat on a high altitude reconnaissance mission was intercepted by an Israeli F-15A and

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shot down, and in mid 1981 one MiG-23 Flogger was also downed by an F-15A. In June 1981 a combined force of F-15As and F-16As attacked Iraq's Osirak nuclear reactor.

One year later the invasion of Lebanon took place. Israeli planes carrying anti-radiation missiles attacked most of the Syrian surface to air missiles batteries (SA-6) that were stationed in the Bekaa Valley in Lebanon It was reported that the Israeli Military Industries remotely piloted vehicle the "Scout" was used to provide real time battlefield intelligence, as well being deployed as a decoy to force the SA-6 missile system to turn on the radars long enough for the anti-radiation missiles to home in on them

Some 90 to 100 Syrian MiG-21 and MiG-23 aircraft were downed in air to air combat against F-15s and F-16s, with only three Israeli aircraft lost. In addition to the air-superiority of these aircraft, the Israeli Airforce deployed the Grumman E-2C as an Airborne Early Warning & Control Center. Whenever Syria launched its fighter aircraft, they were immediately detected by the E-2C and by voice or data link vectored the F-15s and F-16s into combat positions, at the same time the Syrian

airborne radars and communications link with Ground Control Interceptor centers were jammed.

The Israeli Defense Forces had clearly demonstrated the technology capabilities of modern weapons systems as well as their own ability to utilize them in modern warfare namely: command control communications/ intelligence (C3I), electronic warfare, sustained sortie rate generation, weapons effectiveness (high kill rate), the Hi-Lo mix of combat aircraft by the combination of medium range beyond visual range (BVR) missiles carried by the F-15s, and short range head-on missiles, tail chase and close maneuvering combat, and engagement control (i.e. the ability to pick the time and place rather than fight under the adversaries rules). The Israeli Ground Forces on the other hand even though they did not enjoy the same success as the Airforce they clearly applied the basic factors of firepower, mobility and survivability to their ground weapons systems.

In contrast, the Iraq-Iran war was being fought with outdated weapon systems, or stripped down aircraft (such as the F-14 left from the Shah's

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days which flew as an airborne early warning platform with no AAMs.
Overall air-to-air combat all through the war was almost non-existent, and
Iraq enjoyed an overall air-superiority. . It was said by many analysts that
the method of warfare was very close to World War I, with massed
Iranian human wave attacks. As the Iraq-Iran war continued throughout
the 80s, three main areas in warfare came to the attention of the
international community: attacks on strategic and economic targets
(mainly the petrochemical industries and tankers), surface to surface
missiles (SSMs) fired at cities which later became to be known as the
"war of the cities", and the use of Chemical Warfare.

Throughout the years 1981-1987 the total number of oil tankers attacked
was reported to have reached 163, of which 76 were attacked by Iraq
and 87 by Iran. Iraq maritime strike missions, were mostly carried out by
Super Etendards (leased by France and since returned), and Mirage F1
carrying the EXOCET anti-ship missile. Iraq also launched strike raids
against various Iranian oil facilities and the oil terminal island of Kharg and
even Siri island.Overall this had an impact on the Iranian oil production
and export capability since it was the only source of income for the

Iranian economy.

Between 1980-1988 it is believed that Iraq fired some 360 SCUDs into Iran. In the "war of the cities" between February to April 1988 Iraq fired some 200 missiles. It was also reported that 150 of the Al-Husayn missile (an Iraqi version of the SCUD with a range of 650 km) were fired against Iran out of the total of 360. The Iranians fired some 120 SCUDs into Iraq. during the period of the "war of the cities" 77 SCUDs were fired. Iran had also developed and manufactured its own short range surface to surface missiles and rockets, the Iran-130 which has a 130km range and the Oghab with a range of 40km. Some 260 of these missiles and rockets were fired into Iraq. Iran had also received "Silkworm" anti-ship missiles in 1986 and a few were fired. By the time the war ended in August 1988 the number of dead and wounded was estimated to be a little over one million.

During the 1991 Gulf war, Iraq launched 81 SCUDs of the Al-Husayn type of which 53 were directed at Saudi-Arabia and the Gulf and 40 were directed at Israel. Whereas the United States launched some 300

Tomahawk missiles into Iraq.

By the end of the Iraq-Iran Gulf War, ballistic missiles in the region covered the range between 70 to 2,500km. Frog-7 with a range of 70km, SS-21 with a range of 120km, SCUD-B with a range of 300km, CSS-2 with a range of 2,500km (bought by Saudi Arabia from China), the Lance II with a range of 120km. Israel has the most sophisticated indigenous SSM production capability, the Jericho I with a range of 500km and the Jericho II with a range of 1,500km. The Israeli missiles are known to have a nuclear capability. Iraq had developed the SCUD into two versions, the Al-Husayn with a range of 650km and the Al-Abbas with a range of 950km. Iraq test launched a satellite launch vehicle named Tamuz in December 1989, and claimed a similar Intermediate Ballistic Missiles called Al-Aabed with a range of 2,000Km.

During the ten year period between 1980 and 1990, before the start of the 1991 Gulf War, the Middle East saw a boom in military weapons procurement which is reflected in the amounts of money spent. According to the SIPRI 1991 annual book, the total military expenditure of the GCC

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states amounted to around $224 Billion (Saudi-Arabia accounted for $177 billion, Kuwait $13.6 billion, UAE $18 billion and Oman for $13.1 billion. Iraqs military expenditure amounted to about $186 billion and Iran to $84 billion. Israeli military expenditure was $56 billion, Egypt $49 billion, Syria $25 billion and Jordan $6 billion.

Arms Sales After The Gulf War

It has been generally stated that Middle East which accounts for about 3% of the World's population, sits on 60% of the world's oil reserves (the GCC countries plus Iraq and Iran alone have a proven oil reserves of 564 billion barrels which alone comes to 56% of the total oil reserve of about 1000 billion barrels) , accounts for about 30% of the worlds arms imports. This trend has certainly not changed in the past decade as a matter of fact it could very well be said to be increasing in the 90s, especially after the recent Gulf War of 1991 against Iraq, where the U.S and the coalition forces have proven the success of their advanced technology weapons systems under combat conditions and has provided all potential international customers (in particular the Middle East) with

real time product demonstrations.

Between 1989 and 1991 the world arms deliveries dropped from $48 7 billion to $28.8 billion, the M.E. accounted for $12 billion by end of 1990. Between 1990 and 1991 there was a general 30% reduction in the exports of the five big arms exporters (U.S., Russia, U.K., France and China). However only the U.S. had a 40% increase in its sales from $9.6 billion in 1990 to $13.5 billion in 1991.

After eight years of war with Iran, the Iraqi armed forces had gained some experience in combat operations, however this did not prepare them for the method of combat against the large and technologically superior coalition forces arrayed against it in 1991. In fact the main factor contributing to the success of the war against Iraq was the new high-technology weapons which proved to be cost-effective and contributed to minimizing human casualties within the U.S. and coalition forces.

High-tech and smart weapon systems, which proved their high lethality and devastation in combat are now on great demand. Such systems as

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the General Dynamics M1A2 tanks, the Apache AH-64 attack helicopter with its Hellfire missiles (of which some 288 were deployed in the war and accounted for some 500 tanks and 120 APC kills in addition to various other ground forces targets). The British Tornado Interdiction version, Raytheon Patriot air defense system, F-15E Strike Eagle, F 117A stealth aircraft, F/A-18s, F-16s and all their associated integrated electronics warfare systems, all were put to effective use in a combined arms operation against Iraqi forces and air defense systems (mainly SA2/3/6/8/9/13 Rolands and a large number of AAA which nowadays can be considered to be nearly obsolete) , and have shown to provide a force multiplier effect in both air-to-air and air-to-surface target kills.

Since the Gulf war the U.S. alone has announced $21.4 billion in arms sales and transfers to the region. While the U.K. has just received a $7 billion contract for additional Tornado aircraft from Saudi-Arabia. Kuwait is presently attempting to upgrade its defense forces, and some of the items it is buying are 40 F/A-18 worth around $1.6 billion, six HAWK air defense systems worth 2.5 to 3.0 billion dollars, 256 U.S. M1A2 tanks. 46 M88 armed recover vehicles, 125 M113 Apc and various other

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systems.

Israel which now has an annual budget close to $4.5 billion, of which $1.8 billion is in U.S. Foreign Military Sales, has also requested additional AH-64s, and is studying possible aircraft replacements, for some of its 600 combat aircraft fleet. Possibly with more updated F-15C/Es and F-16Cs (or whatever new block is coming up next), and by F/A-18s; all having night/day and all weather capabilities in avionics and weapon systems. The Israeli military industrial complex is known to be the most sophisticated in the region and other parts of the world. It has a wide range of joint ventures with U.S. companies as well as some of its indigenously built RPV and air-to-surface missiles are in the U.S. military inventory and were reportedly used in the recent Gulf War. Israel is also co-developing with the U.S. the "Arrow" anti-tactical missile defense system, and the U.S. is ensuring that Israel will have access to all U.S. technologies for this project as well as establishing a satellite downlink to gain early warning to Israel if any ballistic missiles are launched against it.

Ballistic Missiles & Non-Conventional Weapon Systems

Given that an air defense system is effective in the defense against an attack on ground forces or on targets of strategic value, then the strike force has to include in his strike cell, dedicated defense suppression aircraft carrying ant-radiation missiles and electronic jamming equipment. This could increase his chances of penetrating the air defense system to reach his target and achieve mission success. If the air defense is sufficiently dense and of high-technology, then the number or sortie size of the bomber strike with escorts and defense suppression aircraft will have to be increased to account for attrition along the way and to ensure that enough aircraft reach the target area with the required payload and inflict the required damage. However, at some point the cost in attacking the air defense system and attrition caused could exceed the value of the target to be destroyed. In other words the mission will not be cost effective and could be cancelled altogether.

Another method to attack the target is with ballistic missiles, if they are available and have the range required. The number of SSMs launched to

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achieve a level of damage is a function of the missiles payload and accuracy (CEP). The accuracy is dependent on the type of inertial navigation system, aerodynamics and other technologies of the missile design. Due to the speed and small cross-sectional area of a missiles, makes it very difficult to intercept in flight. The best time would be in its boost phase. However, the technology has not been developed fully yet So to save human and aircraft losses as well as the required reallocation of resources during combat, ballistic missiles can most probably achieve the same objective with less costs. The same scenario can also be possible if a state has a semi obsolete airforce or does not have access to advanced technology aircraft - such as the Tornado IDS, and the F 117A stealth aircraft- and is well aware of the price to be paid to conduct deep strike interdiction missions facing a strong air defense.

The fear with such perceived threats is that as an excuse of the proliferation of weapons of mass destruction could give rise to states announcing a so-called "in-kind" deterrence or "the right to retaliate in kind", which in effect could cause an arms race in the region. With the long range capability of delivery systems, these weapons can also be

used as a first strike against centers of mobilization, airbases, cities and other civilian centers. However, on the modern battlefield h that the casualty rate can be minimized, whereas the high casualty will be civilian population and on the environment for decades to come.

Furthermore, an effective air defense system integrated with an over-all command control, communications and intelligence system can certainly be a force multiplier in time of combat. One method to attenuate, disrupt, interfere with signals from radars, communication and navigation systems that employ electromagnetic waves propagated through the atmosphere is from a nuclear explosion that ionizes the atmosphere in a given area. The level of effectiveness is a function of the type of the bomb, height of burst, and the strategic and tactical requirement.

It has been known for some twenty five years that Israel possess nuclear weapons. There are three main reasons to employ nuclear weapons: as a first strike, as a deterrent, as a weapon of last resort. It has been stated that the Israeli nuclear capability is a weapon of last resort. At the same time Israel state that "it would not be the first country to introduce these

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weapons is clearly a policy of deliberate ambiguity. Which in return has driven some states in the region a poor nations atomic bomb i.e. chemical weapons as a possible deterrent to the Israeli nuclear weapons capability.

Impact On The Current Arab Israeli Peace Negotiations

Arms transfer to the Middle East are not the sole cause of regional problems. In fact the acquisition of arms has been the product of the unresolved political settlement of the Arab-Israeli conflict as well as other regional conflicts. To achieve our ultimate goal of gravitating away from a constant state of high intensity conflict towards total peace will require the achievement of a number of intermediate objectives. In particular the Palestinian-Israeli and Arab-Israeli peace negotiations. The political settlements based on UNSCR 242 and 338 will provide us with the reduction of any motives for the initiation of war.

Over the past four decades there have been a number of arms control proposals and attempts for the Middle East. Starting with the Tripartite (U.S., France and U.K.) declaration in 1950 to limit arms to the region, to

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the Nuclear Weapons Free Zone (NWFZ) first put forward in 1974 to the U.N. General Assembly by Egypt and Iran, ending with the U.S. arms control initiative of 1991.

One main weakness of these proposals was that they were not integrated into a political process. The continued Arab-Israeli conflict made it practically impossible to formulate and implement formal arms control agreements, resulting in a failure from the beginning. Therefore, in any move towards arms control and regional security in the Middle East, the linkage between multi-issue negotiations in both conventional and unconventional weapons and the ongoing peace process must be made A peaceful political solution to the Arab-Israeli conflict should proceed alongside any arms control negotiations, specially in the establishment of a WMD Free Zone in the region. It is quite evident that peace cannot be achieved while still being threatened by a weapons of mass destruction capability of a neighboring country, nor can a WMDFZ be achieved without the context of a comprehensive peace settlement. The ongoing M.E. peace process should provide us with the opportunity of achieving these objectives. It should be further emphasized that political issues

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must precede arms control measures, both structural and operational. The political component is highly significant for it will provide us with a broad structural security framework for the various steps and measures towards arms control.

The present political process has three phases: the negotiations phase, the interim self government period, the final status.

In the negotiations phase nations could start with declatory statements such as:

* the signing of the NPT treaty and accepting IAEA safeguards

* need to settle disputes by peaceful means

* on the dangers of uncontrolled arms race

* non-use of aggression or force to achieve political

  objectives

* need to control arms transfer to the region

* need to regulate arms production in the region

* need to address the establishment of a WMDFZ

* start discussion on a Conflict Prevention/Resolution Center

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Coupled to the above should be a lifting of use of the military for non military purposes in the West Bank and Gaza. There are a number of political and economic Confidence Building Measures (CBMs) or Peace Process Measures that can also be applied such as: the freezing of settlements, family reunification, end to restrictions on travel and commerce, stop the closure of schools and universities, start addressing natural resources such as water.

During the Transitional period, there will be a gradual phasing and implementation of a political and security regime in the West Bank and Gaza, as well as the start of withdrawal from Syrian, Lebanese and Jordanian territories. Some measures in arms control in this phase could be:

* apply verification and monitoring means on borders
* apply appropriate CSBMs when and if necessary to support and reinforce bilateral and multilateral agreements.
* start with a partial change to military structures
* start with a freeze on military build-up and arms procurement
* start with an official register of all arms transfers to the region

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* banning the re-export of certain types of weapons

* start with agreements on the quality and quantity of the

acquisition of certain types weapons

* continue substantive discussions on WMDFZ, arms build-up,

balance of forces and other regional security issues

* a freeze on the acquisition, production and testing of ballistic

missiles by Middle East countries.

* A ban on the production and acquisition of enriched uranium

separated plutonium, and other elements used in nuclear weapons

In the Final Status, long term arrangements in arms control could include

* Full on site monitoring and verification

* Reduction in forces

* Expand regional security framework

* Start implementation of WMDFZ

* Implement regional CSBMs

* Establishment of a regional agency to regulate arms transfers,

with official information on weapons procurement

* Regulate domestic arms production

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