Contributors

Air Chief Marshal F. H. Major ● Air Commodore Jasjit Singh

● Air Marshal A.V. Vaidya ● Air Marshal Vinod Patney

● Professor Srikanth Kondapalli ● Dr. Manpreet Sethi

● Shelly Johny ● Wing Commander Atul Kumar Singh

● Major Leonard G. Litton

AIR POWER

Journal of Air Power and Space Studies

Vol. 2, No. 3, Monsoon 2007 July-September

AIR POWER
CENTRE FOR AIR POWER STUDIES
New Delhi

CONTENTS

VOL. 2, NO. 3, MONSOON 2007 (JULY-SEPTEMBER)

nature of war and advances in modern technology, besides other factors require us to reexamine the long-standing principles of war and see what changes are required to meet the requirements of fighting a future war and winning it.

Air Marshal **Vinod Patney**, PVSM SYSM PVSM AVSM VrC (Retd), former AOC-in-C Western Air Command, writes that intelligence information about the adversaries can never be complete. And if EBO is to be used for contingency planning by the armed forces, the adversary must be viewed as a complex adaptive system.

Professor **Srikanth Kondapalli** examines China's White Papers on National Defence to interpret the changes taking place in China's defence policy and posture. The central conclusion is that China continues to believe in Sun Tzu's precepts of influencing the behaviour of the adversary as a prelude to fighting and winning wars. A modern military force able to conduct high-technology warfare remains integral to this philosophy.

Pakistan's nuclear doctrine and strategy has been clouded by a great deal of obfuscation and ambiguities. What we can do is to arrive at some assumptions on which Pakistan would base its nuclear strategy. Dr. (Mrs) **Manpreet Sethi** explores the direction in which Pakistan has been moving in shaping its nuclear doctrine and strategy, wherein rhetoric and substance have often overlapped. What has been amply clear is that its policy of brinkmanship that exploits uncertainty and rests on a perception of irrationality, however, carries the risk of deterrence breakdown.

EDITOR'S NOTE

The Indian Air Force (IAF) completes 75 years of its existence during which it has had to fight competent air forces more often than most other air forces have done. It is not only one of the very few air forces that were independent at birth and stayed that way, but it cut its teeth on the Northwestern Frontier Province where its partitioned limb continues to battle the tribes in Waziristan, though less successfully. And very soon after World War II came to Indian shores and borders, it underwent rapid expansion and was thrown into the war to halt the Japanese juggernaut. In a dramatic operation, it bombed the Japanese bomber base with make-shift arrangements on a lumbering reconnaissance aircraft locally kitted with two bombs the very next day after arriving at a border airfield in Burma on February 2, 1942. During the next three days, a much older Royal Air Force (RAF) squadron, the 28th, joined in to carry out counter-air operations under the leadership of the then sole squadron of the IAF meant for army cooperation against a formidable air force

From then on, the IAF has never looked back and has accumulated vast experience in war and peace. Barring perhaps the US Air Force (USAF) and the Israeli Air Force, the IAF has been involved in more wars than any other air force. And this has often been done at difficult periods when it was in the process of reorganisation and major reequipping, like in the 1965 War. It has won every air war during these decades and has supported the Indian Army, at times under the most demanding conditions, to ensure that victory is achieved and the nation fully defended. However, the problem is that we have tended to emphasise on a part of the role of the IAF, and not the whole of it: that the role of the air force is to defend India and not merely provide air defence.

A serious rethinking of our understanding of the primary role of the Indian Air Force is crucial to enable the ongoing transformation of the Service to be vectored toward the goals that it must undertake. In essence, this implies a clearer

understanding and articulation of the future role of the IAF (which the Chief of the Air Staff has admirably done in the article in this issue) to provide direction for force development for the future.

AEROSPACE POWER IN A CHANGING NATIONAL SECURITY ENVIRONMENT

F. H. MAJOR

I must acknowledge our gratitude to the founder of the Centre for Advanced Strategic Studies (CASS) and one of the Indian Air Force's (IAF's) illustrious former vice chiefs – Air Marshal Yeshwant Vinayak Malse. For think-tanks and research institutions are so essential to help guide the growth of a nation's organisations, each of which is too preoccupied in its daily duties. It always helps to get views from persons who are not part of the set-up, or those who can provide a fresh perspective, based upon their experiences in other disciplines.

THE CHANGING GEO-POLITICAL AND SECURITY ENVIRONMENT

Global
In the past, it was our circumstances and the non-aligned path we adopted, as well as poverty that kept us practically insular. In recent years, there has been a dramatic increase in international cooperation and contact. The current increasing interaction is a measure of India's growing interests and the broadening and deepening of its international relations. It is also an indication of our relevance in the scheme of things, or of others' interest in us for their own reasons. Indeed, insularity is not an option any longer and has been discarded, in practice, by even the most notoriously isolationist nations. The IAF's current

outreach is a consequence and reflection of that reality. It is of utmost importance that we keep pace with, and better still, shape, these relationships in ways that suit us.It is now almost universally accepted that economic growth enables growth in most other spheres of national endeavour. Indeed, that is India's "strategic objective" and military might is important, but only because it must enhance our national objectives.

The greater interdependencies in today's world have had a significant impact on the autonomy of nations and have redefined sovereignty for all, at least for the less powerful states. The concept of "neighbourhood" is now more inclusive, bringing with it more opportunities, as also more concerns and external influences. These influences may not always be helpful, but they cannot be wished away. It is, therefore, important to be able to take advantage of opportunities and, indeed, create opportunities. This is possible only in a country with an establishment made proactive though institutionalised decision-making and decision-support systems, clear aims and an enlightened leadership. As a consequence, there is a host of vital interests that lie way beyond the homeland and determine what we refer to as our "strategic boundaries." These remote interests must be protected and that is a largely military function. Rivalries among nations are now not merely for power but for interests."Balance of interests" is a phrase that is often used in place of "balance of power."

There is a host of vital interests that lie way beyond the homeland and determine what we refer to as our "strategic boundaries." These remote interests must be protected and that is a largely military function.

The world is not a steady place; there are constant changes and upheavals, as are starkly evident in the changing power equations. The unipolar order is giving way; new power centres are emerging, necessitating realignments and adjustments. New friends and opportunities, new adversaries and altered threat perceptions are the order of the day. If change is the only constant, and it favours those who can anticipate well and act in time –there is a lesson in it for India.

Asia

In the evolving geo-strategic environment of the world today, the centre of power-play is shifting to Asia. It is where the current action is; spurred by booming economies, there, consequently, is rapid development, burgeoning consumer demand and, naturally, growing military capabilities. This region is also one of turmoil and instabilities, as peoples attempt to determine and reshape their destinies. Perhaps all of that is an indicator of the rapid progress being made.

The Middle East is in turmoil, with seemingly insurmountable problems in Iraq and Iran. A number of other oil-rich nations are politically unstable. In our immediate neighbourhood, Pakistan under military rule is afflicted with sectarian violence and now also faces the very real and demonstrated spectre of fundamentalist violence. Afghanistan is nowhere near settled. Nepal is not out of the woods, with the Maoists having more clout than is good. Myanmar continues to be under military rule. Bangladesh has a military-backed temporary government and elections are distant. The age-old ethnic conflict in Sri Lanka continues unabated.

It is also a region of nuclear proliferation and the cradle and playground of terrorism. Consider the Indian Ocean region: every state that has nuclear weapons has an abiding interest and presence in this region. Nuclear China is politically stable, economically strong and is governed by a single party Communist system. Its acquisitions, actions, pronouncements and growing strength cause most neighbours and even the US to be wary.

India

Within this tumultuous new Asia, India is situated in perhaps the most turbulent part of the region. South Asia mirrors all the concerns of the continent. India's strategic frontiers are expanding, its regional role is increasing and with it there is a spreading thin of our resources to manage it all. Perhaps encouraged by powers such as the US, we are aspiring for a greater regional / international role. But we need more national power to back it and the gumption, flexibility and speed of decision-making to make that a reality. Our old concerns and issues with Pakistan and China have not diminished, and both of them are more powerful today – the

Our old concerns and issues with Pakistan and China have not diminished and both of them are more powerful today – the latter significantly so.

latter significantly so. There is considerable increase in Chinese power and influence in the countries surrounding us. This is a matter of serious concern. In addition, the region is also threatened by non-state actors. The problem of terrorism is serious. We also face internal security challenges. India needs steady and concerted initiatives and progress on all fronts to surmount these challenges.

India has all the resources and endowments of a major world power. We have a strategic location in an important part of the world and are progressing rapidly. Our strategic footprint is growing, as the "area of interest" expands; and there are regional responsibilities and roles. We, therefore, have little choice but to follow the globally recognised growth path and, indeed, are doing that. Fortunately for us, we also have considerable in-house talent and infrastructure.

Threats Old and New
We have long-standing disputes with Pakistan and China. In addition, non-state actors also threaten the region. The problem of terrorism is serious. We have in this milieu, a resurgent India, marching on the road to economic prosperity.

The spectrum of threats is also much wider, with a significant increase in the lower-end frictions, asymmetric warfare and *jihadist* activities. The whole spectrum continues to acquire greater technological sophistication.

In the context of the new economic factors, our growth depends on sources and resources that lie distant from the homeland and they also become our vital national interests.

What are the new threats? In the context of the new economic factors, our growth depends on sources and resources that lie distant from the homeland and they also become our vital national interests. Naturally, there always is a competition for resources and that, in turn, generates newer threats. Thus, we have a number of newer security considerations, those of trade security and energy security.

Since the bulk of our energy requirements are met through imports, energy security becomes a critical issue, at least until we are able to action our previous President Kalam's advice and achieve "energy independence" – not merely "energy security."

The redrawn strategic boundaries of a resurgent India, therefore, extend from the Persian Gulf to the Straits of Malacca and from the Central Asian Republics to the Indian Ocean. The enlarged strategic dimensions necessitate not only a radical change in our strategic thinking but also accentuate the role of aerospace power in the new security arena.

CHANGING NATURE OF WARFARE

In the old days, operational plans were real-estate oriented, with the land battle as the primary campaign, supported by the air and maritime forces. Well, even if real estate was not the main objective, enemy centres of gravity were difficult to destabilise, for to reach them, one had to wade through a lot of defences in a serial fashion. Though air power did change some of that, it has really begun to make a difference only in recent years, through modern technology. The objectives, patterns and, therefore, even strategies were fairly predictable. The next war may not conform to the familiar patterns of the past and we may not be able to predict with any degree of certainty as to what the new format would be like.

Just as each of the past Indo-Pak Wars has been fought on different scales, levels and for varying objectives, any future war with Pakistan may also be fought at different levels. It may be confined to Jammu and Kashmir (J&K); or fought along the Line of Control (LoC); be a small-scale conflict as in Kargil; or even encompass the entire international border. It may be conventional or nuclear. Each level of war will be different from the others and it would be difficult to predict the nature and scope of any future conflict. Wars will invariably be influenced by

The spectrum of conflict is wide, and the demands on the military in a future war will be far more challenging, requiring responses that are swift and varied.

international equations. We will have to be prepared to fight internal wars against *jihadis* and terrorists. The spectrum of conflict is wide, and the demands on the military in a future war will be far more challenging, requiring responses that are swift and varied.

Wars have always been multi-dimensional and are increasingly so today. Future wars will require much higher levels of synergy between military power and civil authority. A new role for the military will be "military diplomacy." There will be a need for increased military exchanges and interactions between friendly nations. Organisational changes would be necessary to facilitate both civilian and military establishments to jointly take on both the internal and external security challenges. Moreover, the battlespaces are now transparent to the public, and legalities cannot be ignored.

AEROSPACE POWER

Role of Aerospace Power
Air power played a significant role in World War I and matured by World War II. Thereafter, wars fought in Korea, Vietnam, the Middle East and Indian subcontinent highlighted the growing importance of air power and its impact on the outcome. With the capability of operating in an expanded envelope, the term "air power" was replaced by the more appropriate expression "aerospace power," with a significantly enhanced role in any future war due to the profound change in its inherent characteristics of speed, reach and flexibility. In our context, there is a firm belief that the next war will be "air led" and that the end result will be contingent on what aerospace power is able to achieve.

And the reason is that there has always been a need for the transportability of national power. From the expeditionary armies of Hannibal and Alexander, merchant ships and men 'o' war, to the expeditionary forces of today. These were all examples of power projection and had diplomatic, economic, political or military overtones and objectives. Aerospace power is an ideal means to impart this "mobility" to national power to be able to project it, or protect and assist anywhere in the world and, most importantly, at short notice.

The Indian Air Force

The IAF was established in 1932 to support the British Army, which was fighting to subdue the Afghans. Over the years, the IAF retained the mindset that its primary task was to support the land battle. During World War II, the British imperial authority considered it unwise to allow the Royal Indian Air Force (RIAF) to develop a strategic capability. This is ample proof of the significance of strategic air power. That mindset continued in the post-independence era and the IAF remained a tactical air force. Now that India is emerging as a global economic power, there is an imperative need to change this historical perception and shift to strategic thought.

Considering the expanding strategic boundaries, aerospace power can no longer remain tactical and, by definition, it is not. Of course, the criterion for a force to be strategic or tactical is the end result. We now have the capability by way of hardware and we need to sustain the transition from the tactical to the strategic and be able to effectively influence events within our strategic boundaries. The IAF in its 75th year has effectively demonstrated its strategic capabilities. We need to look beyond our boundaries, beyond Jammu and Kashmir (J&K) and China. There is no denying the fact that problems in J&K will continue. Nevertheless, we must also focus on the newly emerging security concerns, as well as the internal security challenges and the changing nature of warfare.

> **Considering the expanding strategic boundaries, aerospace power can no longer remain tactical, and by definition, it is not.**

ENHANCED CAPABILITIES, APPLICATIONS AND AEROSPACE POWER STRATEGIES FOR INDIA

Enhanced Capabilities

Aerospace power, as we well know, is premised on cutting-edge technology; in fact, it even determines the direction of technological advancement. Recent developments have endowed aerospace power with unprecedented force

Aerospace power is astonishingly reliable, effective, clean and responsive.It enables effect-based operations, makes simpler parallel operations and can create strategic effects.

enhancement, be it in reach, accuracy, carrying capacity or precision. As a result, aerospace power is astonishingly reliable, effective, clean and responsive.It enables effect-based operations, makes simpler parallel operations and can create strategic effects. It offers a solution in almost any situation, in peace, or in the many shades of conflict. Aerospace power has become an "instrument of choice." The IAF is among the leading air forces of the world and has such capabilities, with the right infusion of technology and training, to achieve such results.

Applications

Countries need the sum of their national power to progress. Military power is a critical component of that national power, without which, as history bears out, progress is possible only upto the point where it clashes with the interests of another stronger nation. Aerospace power is an increasingly vital part of that military strength. Modern aerospace capabilities have as much, or even greater, impact than what maritime power did for colonising nations in the past. It is an important index of national power.

Unlike maritime power, whose applicability is determined by a country's geographic location, and the land forces, whose shape and size are determined by relations with neighbours, the size of the country and internal security compulsions, aerospace power has a more universal applicability. Even the army and navy need air power.

Aerospace Power Strategies for India

Clearly, given our situation, concerns and aspirations, a strong and comprehensive aerospace capability is inescapable. Aerospace power has classic roles, which have been described variously. The roles could be referred to as deterrence, punishment, protection, projection and peace-time roles

(D4P). It will be readily apparent, that India needs its air force to have all of these. The IAF must be a strong "deterrent" in a tough neighbourhood. Implicit in the deterrence is the ability for swift, calibrated, but effective "punishment." Our deterrence includes the nuclear dimension, at least until the triad is complete.   Also, the longer our effective reach, the more credible will our deterrence be.

The IAF's primary traditional role is "protection." "Protection" has now expanded beyond the homeland and island territories, to the sea lines of communication (SLOCs), energy and trade interests, in a steadily increasing circle of influence. Essential for this role are, of course, long-range electronic warfare (EW) sensors, airborne warning and control system (AWACS), networked command, control, communications, computers, intelligence, surveillance, reconnaissance (C4ISR), multi-tiered surface and airborne weapon systems, etc.

Next, a term gradually becoming more applicable is the newer (for us) role of "projection" of Indian interests. This requires long-range presence, persistence, and "forward basing arrangements" at other than on our island territories. The projection we envisage would be no more than in the form of a benign presence and assistance to friendly nations in their contingencies. Such initiatives would have to be backed by diplomacy.

Peace-time applications, the 4thP of aerospace power is growing and is perhaps the most visible demonstration and utility – both internal and external, from airlift and surveillance, to possible offensive action. Military diplomacy is yet another application that has increased in recent years and has yielded handsome friendship dividends; generating a bonhomie and bonding that amazingly rub off even at the highest levels. Well, this too is a form of projection and of taking stock of one's capabilities and a measure of the other's.

> **Military diplomacy is yet another application that has increased in recent years and has yielded handsome friendship dividends; generating a bonhomie and bonding that amazingly rub off even at the highest levels.**

OPERATIONALISING THE STRATEGY

If aerospace power can do all that and we need it in all its capabilities, it is obvious that we must possess the necessary tools. Our long-term perspective plans for modernisation must reflect our requirements and our environment, so that at each point in time, we have appropriate and adequate capability vis-à-vis possible adversaries. We need a time-based capability creation plan.

If we are to protect and project remote or distant interests, along with FRA, AAR, AWACS, etc, we must also network all our assets and nodes for effective command and control (C2). That, in turn, will depend upon how much we can exploit "space". Perhaps more than any other, it is air power that is most significantly enhanced by the integration of space-enabled capabilities in its operations. There are, in essence, significant doctrinal similarities between "air" and "space" such as long reach, flexibility of response in any situation, over-the-hill vision, etc. Indeed, and irrefutably, the accepted logical progression for any modern air force the world over is to evolve into an aerospace force.

A comprehensive modernisation must have a fair indigenous content, else it may be neither feasible nor competitive in the long run. Technology acquisition must be energetically pursued and that requires a "whole of government " effort. That indigenisation is not at the cost of our operational potential is a continuous process of evaluation, follow-up and also a bit of a gamble. In fact, even in low intensity conflict (LIC) and internal security (IS) situations, where we face agencies with faint footprints, a technology-based response would be needed, at least by the air force.

Our endeavour must be to aim for a "right-sized" force with "appropriate" capabilities, with reference to time and the anticipated rise in capabilities that surround us.

All of what is mentioned above, requires funding, which, in turn, requires convincing the government, because some of those capabilities could be idle for long periods.

Our endeavour must be to aim for a "right-sized" force with "appropriate" capabilities, with reference to time and the anticipated rise in capabilities that surround us. We cannot merely plan an incremental build-up.

It is also a good strategy to develop synergy, cooperation and inter-operability with civil aviation. This would enhance efficiency, reduce costs and save time. That is quite a task, but we are at it and hope that civil aviation will match our initiatives.

All changes, additions and technology infusion would impact our personnel. In fact, our air warriors are, and will remain, our greatest assets. But we must be able to select the best and train them right. At the same time, we must also have the courage to change our organisational structures and processes to reflect new capabilities and changed doctrines. Keeping up with changes requires a lot of forward planning, vision and anticipation. It is here that such seminars and the thinking they generate can help.

There is one other strategy and that is maximising what we have, to preserve our assets, institutions and processes and prevent neglect. There is a need to pay attention to all aspects and not merely the new and the sensational.

CONCLUSION

For our new role, we need new organisations, new structures and a new level of synergy amongst civil authority, military establishments, defence production agencies, research and development (R&D) organisations and the academic community. As a nation, we are moving along the right path, not only with regard to economic growth, but also to find our rightful place in the comity of nations. We as a nation have the strengths to meet the challenges, whether in the field of science and technology, R&D, production or warfighting. Aerospace power must grow along with the nation; otherwise, there would be neither national security nor economic growth.

To sum up, aerospace power is futuristic and increasingly utilitarian. India requires it in all its capabilities. The IAF has demonstrated its operational professionalism and the world has taken notice. It is our duty to grow in step with the nation to provide it the necessary capabilities and security that it

would need. We must be able to provide all options and be able to execute them once selected.

In the end, I thank you for your attention and patience and wish the CASS good luck and hope to hear of thought-provoking new ideas from this eminent think-tank.

WINNING THE NEXT WAR – JOINTLY

JASJIT SINGH

Regardless of enthusiastic perceptions in some quarters, it has been clear that air power cannot win a war by itself, at least as long as our understanding of war and winning remains rooted in tradition. In fact, neither can the ground forces or the naval forces win wars by themselves, especially where hostile air power exists and is used, however poorly. Such situations do not – and are not likely to – occur in the foreseeable future in our context. Preponderance of force has not produced victories even against sub-conventional wars, whether in Afghanistan in the 1980s or now, in the second Iraq War beginning August 2003, or even in our history. In fact, it has become far more problematic to even define victory and defeat, especially where nuclear weapons are present and/or sub-conventional conflict is prevalent.[1] The difficulty, of course, is that military professional circles worldwide have yet to really come to terms with the nature of changes that have already taken place in military power and its employment for a variety of reasons in conventional wars; and this has taken place because of changes in the capabilities of the various components of military power and their employment. Many more changes are expected in the coming years which would make it even more problematic to adjust to change.

It is against this brief background that we need to note that it is not enough to keep repeating the well established descriptive attributes of air power like speed,

---

Air Commodore **Jasjit Singh, A**VSM VrC VM (Retd), Director, Centre for Air Power Studies, New Delhi.

1. For a recent study, see Jan Angstrom and Isabelle Duyvesteyn, *Understanding Victory and Defeat in Contemporary War* (London: Routledge, 2007). While the authors have focussed on terrorism and insurgencies, the issues raised also have a great bearing on conventional wars.

range, versatility, lethality, heavy load carrying capability, etc. What is important is the answer to the question that must be asked: what can the air force do that will have a *decisive effect* on the outcome of the war in general, and – since land war remains a major yardstick for judging it — the ground war in particular?

EFFECT-BASED WAR-FIGHTING

In recent years we have witnessed focus on "effect-based-operations" (EBO in short) which seek creating the right effect rather than aiming for mere destruction. While this is being advocated at the military combat, mostly tactical, levels, logically this must begin at the highest strategic level itself. In other words, what would be the strategic effect that a country could/should seek with the employment of its military power and waging war? In Clausewitzean terms, war was an extension of politics by other means. Though there have been enormous changes over the past two centuries, conceptually speaking this, principle has not changed. The political aim of wars that Clausewitz rationalised was to defeat and, if possible, destroy the enemy's military forces as a prelude to the capture and occupation of enemy territory for exploiting its material and manpower resources. But capture and occupation of territory as the primary aim of war is no longer a viable objective for a variety of reasons that we need not go into here. The last territorial war for occupation was really the 1990 invasion of Kuwait by Iraq which sought to annex the resources of the former. And, surprisingly, the United States decided to buck the long-term empirical trends by trying to occupy Iraq after the March 2003 War which defeated the Iraqi military. So what aims should we seek for future wars in our context?

Territory may no longer be the prime object of wars now; but this by itself has increased the political-psychological salience of capture of even small quantities of territory as a negotiating chip because of the issues and sensitivities about national sovereignty. This is the reason for the tendency to defend "every inch" of territory as a political goal even though it imposes severe constraints on implementing an effective military strategy. Capture of territory in this context would remain an important goal in wars in the future, though its occupation for any significant period would remain extremely problematic. This assumes even

greater importance where nuclear weapons are held by the contestants, as is the case in our region, since any significant capture, leave alone occupation, of territory would increase incentives toward escalation across nuclear thresholds when it is perceived by the defenders to pose a threat to the survival of the state.

While it is patently clear that the ground forces are crucial to victory in war, we need to recall that air (and space) power, operating as it does in the third dimension, is capable of achieving strategic effect independent of other forms of military power. This is due to the reality that air power inherently possesses the characteristics to exercise influence and control over land and naval forces while it can command its own medium. On the other hand, ground and naval forces can exercise command over their own respective medium, but they cannot exercise influence/control over air power operating in the vertical domain (except in a limited way through localised use of air defence weapons). This factor, along with the actual attributes of air power, points toward the air force as the key element for achieving strategic effect.

> **Air (and space) power, operating as it does in the third dimension, is capable of achieving strategic effect independent of other forms of military power.**

The problem is that if ground forces are likely to be restrained to local-border war due to its prime historical goals having been narrowed by a number of over-riding factors, the best outcome that can be achieved is a limited success which may or may not achieve the requisite strategic effect of influencing the enemy's behaviour to any significant degree. The challenge under these circumstances is: how to apply coercive force leave alone punitive force to achieve the effects necessary to alter the enemy's policy choices? Such coercive force beyond the contact battle, by definition, would have to be undertaken by air power, both the combat component and, in particular circumstances, by special forces relying on the airlift component of air power. Conceptually, the air force would be the appropriate instrument to apply coercive-punitive force, by itself in some cases, but also in concert with ground and naval forces even when their role is

strategically defensive. This fundamental reality has to be taken into account if joint warfare is to succeed in future.

AIR DOMINANCE

But the air force cannot achieve the desired strategic effect unless it possesses in substance the capabilities for what it is conceptually capable of – being able to influence, and if properly configured and employed, to control the employment of land and sea forces below. This unique attribute provides the air force with the quality of being a strategic force, with strategic reach, capable of achieving strategic effect. This is due to the combination of mobility, firepower, reach and flexibility that air power intrinsically possesses. The only serious challenge that air forces have to contend with in the air is that posed by the enemy air forces, which in principle could possess similar or better capabilities. And air dominance cannot be exploited to its intrinsic advantages unless the hostile air force is subdued or, ideally, eliminated from being a factor in war. It needs to be noted here that much of the lessons of recent wars could be misread since the wars took place with a near total dominance by the US (and its allies) in air and space.

> **This unique attribute provides the air force with the quality of being a strategic force, with strategic reach, capable of achieving strategic effect.**

What does air dominance imply? The role and importance of air dominance go beyond the classical concept of air superiority. Douhet's concept of "command of the air" did signify the goal of dominance in and from the air. In the early years, this centred on air-to-ground attacks in the classical "bombing" role. But fighter aircraft carried limited weapon load and possessed limited combat radius and less capabilities for the type of bombing for this purpose. A heavier weapon load to longer distances could be carried only in larger platforms – and the "bomber" was born from transport aircraft. But limitations of technology necessitated use of inaccurate free fall bombs from medium altitudes, mostly employed in area bombing tactics. These inevitably focussed on population centres and industrial complexes; and this limitation, in turn, led to

the concept of strategic bombing. While enormous destruction was rained down from the skies in "city busting" strategic bombing, the dominant effect would be achieved finally only with the atomic bomb in August 1945.

The lesson of history is that dominance in and from the skies is almost invariably hinged on force employment; and this was limited in air-to-ground attacks due to limitations of accuracy of attack and/or range. The bomber had more range and weight of attack, but bombing was not accurate. The fighter (and fighter-bomber) could deliver weapons more accurately, but was limited in range and weapon load. This was particularly so in our case till recent years since the bulk of the combat force of the Indian Air Force (IAF) was composed of Soviet origin aircraft, with limited payloads and radius of action. This, in turn, dictated forward force deployment, forgoing the intrinsic advantage of strategic depth that India possesses.[2]

The consequence of the limitations of air-to-ground strike was that air superiority essentially implied air-to-air dominance (leading many to assume the struggle for air superiority as a private war between air forces) which no doubt permitted extensive freedom of action not only to the air force achieving it but, more importantly, for the surface forces operating below. This, in turn, had led to ground-based air defence systems becoming more lethal and deployed in ever greater density. One consequence was to narrow the impact of air power in the air-to-surface role, while increasing the costs of air support to land forces. The other was to find ways and means of getting out of this constraint through technological advances.

Historically, while air-to-air warfare had become all-weather with beyond-visual-range (BVR) precision strike capabilities even by the 1960s, air-to-surface warfare had remained constrained to line-of-sight (LOS) weapon delivery till recently where the pilot's eye contact with the target became the defining characteristic of strike from the air.[3] The target on the ground had to be visually located, identified and acquired before weapons could be launched

---

2. See Jasjit Singh, "Strategic Reach - Strategic Depth, and the Question of the IAF's Strategic Posture," *AIR POWER*, vol. 2, no. 2, Summer 2007 April-June, pp. 11-26.
3. The difference in the proportion of smart weapons used in the 1991 Gulf War and the 2003 Iraq War is sufficient indication of this trend.

with a reasonable possibility of hitting it. At one level, this intensified the aim of air strike in terms of kinetic shock effect (sidelining the crucial impact of psychological shock effect of air attack) and as the criterion of successful attack in relation to destruction of the target. At another level, this brought the attacking aircraft inevitably within the lethal range of air defence weapons, often requiring flying over the target itself, increasing aircraft vulnerability. Almost all our combat losses in the air during the 1971 War were during air-to-ground missions.

Stand-off and BVR air-to-surface precision strike capabilities now not only equip the air forces of the advanced countries, but are increasingly available in our region too. Laser-guided bombs were used to great effect in interdiction missions reshaping the battlefield during the 1999 Kargil War. The issue is not confined to acquisition of precision guided munitions (PGMs) but the total capability for extended range precision strike which requires high quality reconnaissance, surveillance and target acquisition (RSTA) capabilities for precision strikes to be effective. This is an area that requires high priority in building IAF capabilities if the advantages of the air-to-surface dominance are to be optimally used, leave alone fully exploited. In other words, building IAF air dominance capabilities is critical to winning strategies of not only the war in the air, but more significantly, the war on the ground and at sea. IAF strategic reach has been expanding and this naturally implies expansion of the battle space. In turn, this would demand enormously expanded intelligence and RSTA capabilities if the attributes of air dominance are to be effectively exploited.

Logically, air dominance capabilities should be planned for in peace-time since existential air dominance capabilities provide a powerful conventional deterrence capability. They would then confer a definitive competitive advantage in case of deterrence failure, enhancing the credibility of deterrence. Higher credibility of deterrence itself implies reduction of the risks of deterrence failure. But at this point in our history, while we aim for building future

Existential air dominance capabilities provide a powerful conventional deterrence capability.

capabilities, air dominance in our case would have to be contested, perhaps even from a position of disadvantage (if we are unable to restore the air power balance vis-à-vis China). Given the ongoing military modernisation and the unambiguous priority that China and Pakistan (since 1999) are giving to rapidly build their air forces, the decline in the force level would have to be arrested on the highest priority before we can seriously address the issue of optimising air force capabilities.

It needs to be noted that in all the wars after the end of the Cold War (and most before that) the US and its allies enjoyed total air dominance and, hence, air power set the conditions for rapid and less costly success in war. In the 1999 Kargil War, we also enjoyed total air dominance of the battle space with similar effects. Maximising favourable air dominance capability would remain the aim of all modern air forces. And China's own official 2004 Defence White Paper now categorically lays down the contours of its military strategy when it states, "While continuing to attach importance to the building of the Army, the PLA gives priority to the building of the Navy, Air Force and Second Artillery Force to seek balanced development of the combat structure, in order to *strengthen the capabilities for winning both command of the sea and command of the air, and conducting strategic counter-strike.*"[4]

A less asymmetric balance of air power (like that in our region) would naturally absorb a (corresponding?) proportion of air effort in contesting air dominance through air-to-air dominance. This implies that the quality and extent of air dominance of the surface forces would be heavily influenced by the ability of the IAF to fight both battles for air dominance simultaneously and do it rapidly and successfully. In fact, there may be occasions (like the enemy launching a surprise attack) when air-to-ground operations may have to take the lead.[5] This is where force size starts to assume importance in an era where mass in general is replaceable by technology, especially that related to what have come to be termed as "force multipliers."

---

4. White Paper on China's National Defence, December 2004.
5. This was the case in the 1973 Yon Kippur War when the Arab militaries achieved strategic surprise. This was also the primary option available after the terrorist attack on the Indian Parliament on December 13, 2001, for a prompt response while the Indian Army (like the Israeli Army in 1973) mobilised.

TRINITY OF MILITARY POWER

There is a natural tendency in modern militaries to focus on technology, especially superior technology (in particular those that come under the rubric of "force multiplication") as the key to favourable competitive advantage in war-fighting. This is one reason for the rush toward ownership and control of new systems and technology which then become a handicap for jointness and building mutual trust. The debate about utilisation of space for our defence (which hardly evoked any interest in the armed forces a decade ago when the political leadership of the country was pressing for it) suddenly erupted into criticism and opposition when the Indian Air Force sought to establish an Aerospace Command for its own needs is a case in point![6]

Conceptual Consensus

A commonly accepted conceptual foundation covering military power as the ultimate instrument of the state is critical to bring everyone onto a common professional grid in respect of our strategic priorities and where the role of (military) force fits into this. This requires much deeper understanding of the theory of warfare and application of military power, including its limits and

Conceptual Foundations

Enemy

Force Planning ⟷ **Force Employment**
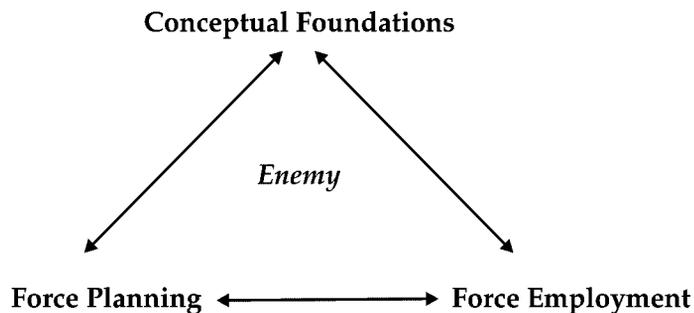
capabilities (well beyond mere "principles of war," many of which are getting superseded by advances in technology, etc.), the driving urges, politico-military

---

6. The bipartisan Standing Committee of Defence of the Lok Sabha has been pressing the Ministry of Defence since 1998 to set up an Aerospace Command in the IAF to access capabilities for national defence. See successive reports of the committee over the years indicating that little or no action was taken on a strategic defence issue in spite of the political leadership of the country pressing hard for it.

goals and strategies of potential adversaries, our own cultural correlates, the history of wars and weapons in general and that of our own and those of the likely adversaries, the political system, the dynamics of the international system, military technology, and the conflict environment (especially, the impact of nuclear weapons), etc.

This is a vast and varied area which is covered only partially in the normal course of command and staff appointments; and much of this keeps changing. And what is more, each of these has varied dynamics, affecting different components of military power (with their unique institutional cultures) differently. It would be unrealistic to expect that we can craft a joint approach, leave alone meaningful integrated operations, without a conceptual consensus – or at least a common understanding – of these areas. Our difficulties are compounded by lack of agreement and understanding of the vocabulary related to these issues.[7]

On the other hand, it is only when common understanding and agreement have been reached on the nature of the war (for example, a local/border war, a full-scale war, or a war under the nuclear overhang seeking "decisive military victory" or a limited war with limited objectives of raising the cost to the enemy for some of its policies, and so on) and how its outcome (decisive military victory, successful application of punitive military force to alter/influence enemy policies, etc.) would be shaped to achieve our national interests that we can move onto the next step of deciding the capabilities (single Service as well as joint Service) that would be needed and could be created, given the usual constraints of technological and fiscal resources. Such conceptual foundations are built up through rigorous studies, debates and discussions broadening the participation at every opportunity.

Force planning obviously is all about creating future (relevant for the next 3-30 years, allowing for the time taken for decision-making and the life of equipment in active service) capabilities and capacity. This is not an easy task since the technological and operational environments would keep changing.

---

7. The foreign secretary of India, in a recent address, highlighted the serious deficit in understanding our future challenges because of the lack of our own vocabulary dealing with national security issues. See Shivshankar Menon, "Challenges to Indian Foreign Policy," *AIR POWER*, vol.2, no.2, Summer 2007, April-June.

And making joint long-term plans gets even more complex for a variety of reasons. This makes it essential to define a clear vision to provide the necessary guidance and keep it under regular review to incorporate changes that might be necessary in the joint doctrine that should flow from the vision. Paradoxically, it also implies a degree of flexibility to make changes while providing the vision and doctrine with a high degree of sanctity without which it would rapidly lose its very purpose. The force planning process must start on the basis of the professional grid of conceptual foundations.

Force employment has not received the attention it deserves as the key to winning wars. Superior technology and/or mass (the size and concentration of military force) have been perceived in the past as the critical drivers of war winning. Hence, the focus of military planners and commanders has inevitably been placed heavily on military technology and its acquisition to build future capabilities. Rapid advances in military technology have further boosted the role and dependence on technology, leading to doctrinal emphasis on "high-technology" warfare since the 1991 Gulf War. China even modified its doctrine from people's war to one of fighting a "modern war under high-tech conditions." Technology was seen to have engineered a revolution in military affairs (an RMA, though the term is hardly heard a decade later).

Military force employment (and the principles on which it is based) has been the single most dominant factor leading to victory in wars.

But the weight of empirical evidence in military history over the centuries points to a fundamental consistency, that military force employment (and the principles on which it is based) has been the single most dominant factor leading to victory in wars. This, *prima facie*, appears to be in contradiction to the role of modern technology and capabilities built on its strengths. Technology, especially in the shape of weapons and military systems, is certainly a critical component employed in force employment besides the factor of force size and mass. Modern military forces naturally place great store by the technological capabilities they can acquire and field. The issue of mass and size of forces naturally gets

relegated in this process to the impact of technology. The dynamics of technology and war inevitably tends to place great emphasis on "capabilities" in terms of weapons, equipment and structures. But that leaves a question often unasked: how do we build capabilities for superior force employment?

The principles of force employment exist essentially in the conceptual domain and are subject to enormous uncertainties and ambiguities, not the least being how the enemy wishes to fight and what he fights with. To be effective and successful, these principles should be based on historical experiences, cultural correlates (especially strategic culture), the theory of use of force, available technology, political and psychological dimensions of war and war aims in a given strategic environment, and so on. Above all, force employment must be able to maximise the attributes of technology, manpower, and organisation in the context of the specific operational environment to achieve the desired effects. In other words, force employment emerges from the intellectual capability to synergise various elements of war-fighting means in relation to those of the enemy.

Military thinking tends to focus a great deal on capabilities, both our own and these of the potential adversary. Intelligence assessments tend to be influenced more by the bean count approach to capabilities. But capabilities by themselves do not result in winning wars; their optimum exploitation does. And this requires that the focus on capabilities should not become absolutist and the "enemy" be brought into the picture and its examination at every step. Competitive advantages in force employment in war start with planning in peace-time through rigorous analyses of the likely operational-technological environment, the likely enemy strategies, our own capabilities (in terms of technology and force size) and options to achieve favourable asymmetry that force employment could exploit with benefit. Deficit in

> **The principles of force employment exist essentially in the conceptual domain and are subject to enormous uncertainties and ambiguities.**

> **Capabilities by themselves do not result in winning wars; their optimum exploitation does.**

capabilities can be compensated by force employment, but only within limits; and surplus capability does not automatically translate into victory. The greatest challenge in peace-time force planning for war winning is to acquire appropriate capabilities for force employment in war. In other words, creating optimum synergy between concept (and doctrine) and capability in an interactive process is central to winning future wars.

WINNING WARS JOINTLY

Two basic factors must be kept in mind when addressing the issues of jointmanship: first, that even military systems (like that of the United States) that have achieved extensive joint thinking, planning and employment of military power, continue to be stymied by differences among different components of military power, often leading to acrimony and sub-optimal performance. And, second, increasing specialisation in military forces makes it far more difficult to achieve in practice what in theory may look attractive. In the former case, the dissonance could be due to honest professional differences as is the experience in the bulk of the cases,[8] or due to institutional biases/loyalties (which military forces have to foster and guard jealously in order to build and exploit them to enhance combat effectiveness), the lack of mutual confidence and trust among individuals and different components of military power (hence, the desire to keep capabilities and forces "under command") often arising from a lack of understanding of the role, limits and capabilities of each other, problems of institutional and individual egos, and so on.

Lack of trust is another factor that creates problems for joint operations. Armies, influenced as they are by the emotions of close combat, have little faith in air force operations beyond their visual horizon; and air forces have traditionally suspected the armies of trying to control and/or nibble at their existence partly because all but a few air forces grew from being integral components of the armies (the IAF being one of the few exceptions through the past 75 years). But "professional trust is necessary between the Services so that

---

8. The current disagreement between the US Army and the USAF about air space management above the very small zone of around 30 sq. km. in size in Baghdad is symptomatic.

each is not pursuing its own self-fulfilling aims but competently employing its combat power for the benefit of the joint force as a whole."[9] Gen. Charles A. Horner wrote about Operation Desert Storm:[10]

> Trust was the key factor. Land, sea, air and space were all sub-elements of the overall campaign: *there was no room for prima donnas. You need people schooled in their own type of warfare, and then you need trust in each other.* (Emphasis added.)

But we need to take note that even in the United States, "Service ways of doing things" have persisted for nearly two decades since the passage of the much admired Goldwater-Nichols Defence Reorganisation Act of 1986, indicating that the deep-rooted nature of Service cultures and bureaucracies continues to affect jointness. The most crucial underpinning of jointmanship lies in joint concepts of war-fighting that can then be used to develop capabilities to undertake joint operations. But there are many studies indicating that even the US joint system continues to produce "concepts that are amalgamation of Service doctrines and capabilities rather than demanding that the Service develop capabilities specifically designed to support joint doctrines." If this is the situation in the US military which at least is integrated vertically in the Ministry of Defence (unlike ours) and mostly unified horizontally, we would need to examine very carefully how to achieve the requisite level of "jointness" which serves the common purpose of preparing for, and winning, a war instead of relying on *mantras*.

Reducing Inter-Service Tensions
Winning the next war jointly requires that we identify at least the major areas of professionally divergent thinking and inter-Service tensions. Three are examined here to illustrate the principles on which to deal with them. The (US) Army and Air Force experience the greatest inter-Service tension over the relative roles and limits of the boundaries of ground and air power in war-fighting. This tension largely results from how joint doctrine designates areas of operation (AOs) and how the

---

9. Lt. Col. Terry L. New, USAF, "Where to Draw the Line Between Air and Land Battle" *Air Power Journal*, (Maxwell, USA), Fall 1996, p. 47.
10. Joint Publication 1, p. 89, cited by New, Ibid., p. 47.

army views deep operations. This, in turn, raises the conceptual issues regarding coordination boundaries between air and ground forces.

Land forces have tended to acquire weapons with increasing ranges and lethality and acquire a justifiable interest in what happens over the horizon and what has come to be known as the "deep battle" in hostile territory well beyond the traditional "bomb line" of the ground battle which normally coincided with the range of artillery guns, that is, out to about 25-odd km from the contact line.[11] But by their very nature ground, forces are far less effective as a force to conduct military operations well beyond the contact battle as compared to air forces. The experience of recent wars indicates that a shift has taken place in the relative war-fighting roles of ground and air power and this was most visible in the 2003 Iraq War. A recent RAND study on the evolving roles or ground and air power indicating the deficit in US joint doctrines concluded from the assessment of the Iraq War that:[12]

- The strategic and operational levels of war-fighting against large conventional forces were dominated by flexible, all weather, precision-strike air power, enabled by intelligence, surveillance, and reconnaissance (ISR).
- The tactical level of war and the exploitation of the operational effects of air power were the primary domains of ground power.

This is because surface forces now possess overwhelming tactical dominance capabilities and the optimum role for their employment in a local border war would be to force the enemy to react at the operational level by either concentrating forces or moving the reserves, thus, making them vulnerable to air attack with the air-to-surface dominance of the air force. The principles apply in respect of the naval environment possibly with greater effect since the protection provided by camouflage, dispersal and other survival strategies is not available at sea, making naval assets more vulnerable to hostile air power.

A second area of tension between ground and air forces is that concerning management of the air space, especially in tactical battlefield areas. And the armies

---

11. This, incidentally, was the agreed dividing line of Service responsibilities between the Indian Army and IAF in the early 1980s.
12. David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica: RAND, 2007), p. 140.

are constantly expanding this area. In spite of enormous investment in "jointness," the US Army and Air Force have serious differences, among other areas, in the management and control of air space in the battle zone. In recent times, this erupted poignantly in Iraq where at least five collisions have recently taken place between UAVs and combat aircraft/helicopters within a small area of 30-odd sq km above Baghdad where close to 100 aircraft (including UAVs) are operating on a typical day.[13] The disagreements are not about ownership, but actually about the "fundamental philosophies of command and control" of the two Services in spite of decades-old foundations of joint operations and a unified joint command. The US Army "uses procedural control – essentially setting up cylinders in the sky where certain units are allowed to operate, and then trusting everyone to follow the rules" while the "air force uses positive control in which air traffic controllers keep tabs on everything aloft."[14] Resolution of this source of tension requires greater understanding of the basic parameters of air defence and air space management.

The third is another perennial issue: the over-riding need for the air force to dominate hostile air forces. The war in the vertical dimension has to be fought and won by the air force by its own means, and air dominance would remain its preeminent role and mission to provide the environment for war winning. But air dominance, in both air-to-air as well air-to-surface superiority roles, would provide enormous freedom of action for ground and naval forces to conduct operations they are best suited for while undertaking (strategic and operational level) air strikes and support missions contributing to the war-fighting capabilities of surface forces. The primary role of the air force in respect of the *joint war-fighting* would be to shape the battle space at the operational and strategic level, besides providing

The war in the vertical dimension has to be fought and won by the air force by its own means, and air dominance would remain its preeminent role and mission to provide the environment for war winning.

---

13. Gayle S. Putrich, "Unmanned and Dangerous: How UAV-Plane Collisions Are Changing US Air Control," *Defense News*, June 11, 2007, pp. 7-8.
14. Putrich, Ibid., p.8.

close air support and performing other roles like ISR, airlift, etc.

The crux of success of joint war-fighting is that both the land force commander and the air force commander must accept that the roles and effects created by each component lead to maximising war-fighting effects within the bounds of land and air power capabilities. A recent seminal study by RAND concluded that the principal role of the land forces would be to employ their overwhelming tactical dominance to:[15]

- "force enemy reaction at the operational and strategic levels by forcing concentration and/or movement, thus, making them vulnerable to air attack;
- "close with and finish enemy tactical remnants, exploit success and seize and hold ground;
- "deal with the post-conflict security environment until the desired strategic political end state is achieved."

Air power's role, according to this study, argues the author, should be to:

- "shape the theatre at the operational and strategic levels;
- "provide close air support (CAS), intelligence, surveillance, and reconnaissance (ISR), and lift to support ground combat operations;
- "provide CAS, ISR, and lift for ground-force operations to secure and stabilise the theatre."

However, we must note a caveat here. The study and experience of the US military in war-fighting since the end of Cold War (Gulf War 1991, Bosnia 1995, Kosovo 1999, Afghanistan 2001, Iraq 2003-) has been against enemies that did not possess air power, except for Iraq in 1991, which was rapidly neutralised by the far superior US air power. The clear lesson is that the above recommendations assume total command of the air.[16] In our case, this is not likely to be so and the command would have to be contested. Hence, the role of seeking and achieving "air dominance" would be a prerequisite to the ground and air power roles outlined above.

---

15. David E. Johnson, *Learning Large Lessons: The Evolving Roles of Ground Power and Air Power in the Post-Cold War Era* (Santa Monica: RAND, 2007), pp. 193-194.
16. Incidentally, winning a war through "command of the air" is now the official policy and strategy of China as per the White Paper on National Defence 2004.

PRINCIPLES OF WAR
DO THEY REQUIRE A RETHINK?

A.V. VAIDYA

One often gets to hear the ironical statement that nothing is constant other than change. Time moves on, bringing changes in our daily life, in the global environment and in everything that affects us. With these changing situations, one needs to review one's thought process and action plans to deal with the changed scenario. At times, the required change may be radical and, in some cases, not so revolutionary. Based on this reasoning, one wonders whether the age-old principles of war require a rethink. Should they not be altered to meet the changed scenario more effectively? Aren't they rather archaic and irrelevant for the conduct of modern high-tech wars?

Before we give a rethink, let us first see what we mean by these principles of war. One of the simplest definitions of these principles of war is that they are the basic principles of combat in order to obtain victory. They could also be called the rules for victory. They may also be defined as the fundamental truths governing the prosecution of strategy and tactics. They are theories and are derived from many military histories. War is a clash of opposing wills, a struggle between beliefs, and victory goes to the party that crushes the enemy's will and destroys his beliefs. Warfare, thus, is a struggle for victory, using "power" to cause the opponent's will to yield and own will to prevail. These principles of war lay down the broad guidelines for achievement of victory. In other words, the principles of war are theories formed dialectically from accumulated reasoning and corroborative evidence. If that be so, then it implies that they are

Air Marshal **A.V. Vaidya** VM, is currently at the Integrated Defence Headquarters.

continually evolving with the passage of time and cannot be described as unchanging for all times to come.

In order to apply these principles successfully, one has to have an indepth knowledge of military history, understand how they have been evolved, grasp their essence, understand the current situation in which they need to be applied and only then will one be able to take correct decisions.

Doctrines are the guiding principles and basic rules for action that should be taken to embody and carry out national defence policies.

At times, people tend to get confused with words like "principles", "doctrine", "philosophy", "strategy," etc. It would, therefore, be proper to understand the subtle differences in their meaning before we get on with our discussion on principles of war. "Philosophy", as defined in the dictionary, is the critical study of basic principles and concepts of a particular branch of knowledge, especially with a view to improving or reconstituting them. Through philosophy comes "doctrine" which comprises fundamental ideas by which military forces guide their actions in support of laid down national objectives. Doctrines are the guiding principles and basic rules for action that should be taken to embody and carry out national defence policies. The dictionary defines doctrine as a particular principle or position which is taught or advocated by an organisation – a sort of company policy. By its very nature, doctrine, though authoritative, requires judgement in its application. Doctrine deals in ideas while philosophy deals in fundamental

In contrast to both philosophy and doctrine, "strategy" is the operational science or art of combining and employing the means of war in planning and directing its conduct.

principles and concepts. Both are subject to changes with the changing prevalent environment, technological innovations, things like the revolution in military affairs (RMA), etc; however, philosophy, by virtue of its very basic and time proven nature, is less subject to changes than doctrine.

In contrast to both philosophy and doctrine, "strategy" is the operational science or art of

combining and employing the means of war in planning and directing its conduct. "Tactics" is further defined as the art by which fighting elements translate potential combat power into victorious battles and engagements. In comparison to all these definitions stated above, the principles of war, as defined earlier, are tenets which, if applied correctly, will give better probability of success. They suggest how to prosecute strategy and tactics. Principles of war are more general and their application is universal and neither is it binding.

Wars are fought with the use of combat power but it is not necessary that victory will go to the side which has greater combat power. It is not combat power alone that matters but, more importantly, its correct application will decide the result. Principles of war, by and large, focus on this aspect of power application. Combat power is divided into intangible factors and tangible factors. The intangible factors are the mental and bodily capabilities of the individuals and groups that comprise the military forces, the most important one being the spiritual strength of the forces. In other words, these factors include quality of command and control, state of discipline (troop morale), fighting spirit, quality of training, *esprit de corps*, spirit of teamwork, etc which cannot be easily quantified. The tangible factors are strength of military personnel, quantity and quality of material, qantities of various weapons, destructive power, tactical mobility and other physical strengths. The principles of war concern both the tangible and the intangible aspects of combat power.

The principles of war articulated by the young Prussian officer Carl von Clausewitz date back to nearly two centuries and find their roots in the Napoleonic wars. Generally, most of the principles of war articulated by him are related to conventional warfare, the way it existed during his times. In today's context, the possibility of a conventional war between nations is fast receding. Conventional warfare has today been replaced by all encompassing asymmetric warfare, also called unconventional warfare or indirect warfare and that too with the backdrop of the threat of nuclear, biological, chemical (NBC) and weapons of mass destruction (WMD), particularly in our context.

Despite this change in the texture of warfare, these principles of war, though old, are still considered by some to be the fundamental truths governing the

philosophy, doctrine, strategy and tactics of war. They are still considered valid in formulating the doctrine at the highest level, designing the strategy at the theatre level and executing the tactics at the battlefield level. It is claimed and also proven in various wars that adherence to these principles guarantees a higher probability of success as compared to situations in which they are disregarded.

Some say that Clausewitz had propagated mainly five principles, namely, objective, offensive, concentration, economy of force and mobility plus three "elements," namely, surprise, morale and exploitation. They feel that the essence conveyed in these principles of war is immutable and that the principles which were so true in the age of the sword and arrow are equally true in the age of missiles and precision guided weapons. They argue that with the changing times, the methods of application of these principles might have changed but the soul and spirit behind them is immortal. They insist that this spirit is independent of times, arms employed, types of wars and even of places. The great naval strategist Alfred Thayar Mahan supposedly belonged to this school.

Then there are others, and probably in the majority, who feel that these stated principles of war not only need to be changed but also the essence and spirit behind them needs to be reviewed. They feel that these principles of war were given to us by the past experts based on their history and their experiences of the past wars. We need to recast them based on the lessons of our past, present and their applicability in the future and pass them on to the next generation who can then modify them as per their experiences. Some of the reasons put forward by them which necessitate this rethink are:

- Change in the texture of war.
- Dissolution and blurring of borders of conflict.
- Diffused arena of conflict, with the enemy seeking cover and concealment in cities amongst the civilian population.
- Emergence of non-state actors.
- Proliferation of WMDs.
- NBC environment.
- Weaponisation of space.

- Energy crises.
- Combating terrorism.
- Peace-keeping operations.
- And so on.

Wars can now be divided into two distinct types viz. conventional and unconventional. They can further be classified as those with and those without the backdrop of NBC and WMD threat. One could also have a complex scenario wherein both these types of wars are being fought simultaneously. The relevant question, therefore, is that if there are two distinct types of wars then, is there a need to have distinctly separate principles of war for them?. Perhaps we need to. We not only need to give a rethink to the principles narrated by Clausewitz but also need to carefully and with proper deliberations, enumerate separate relevant principles of war for unconventional or as it is also called, asymmetric war.

As we review and rethink about these principles of war in the succeeding paragraphs, we may realise that we need to retain some of them, transform a few of them, delete a couple of them and perhaps add some new ones. There are somewhat different versions of the principles of war, from country to country and between various theoreticians, but, generally speaking, there is little practical difference between the versions. The Americans have officially accepted nine principles of war which they teach to cadets at West Point.

There are somewhat different versions of the principles of war, from country to country and between various theoreticians, but, generally speaking, there is little practical difference between the versions.

An article on the Internet on this subject states that the nine principles of war as currently included in the US doctrine are as follows:

1. **Objective:** Direct every military operation toward a clearly defined, decisive and obtainable objective. Clearly defining an achievable end state remains critical to successful military operations. The proper objective ("purpose") in

battle is the destruction of the enemy's combat forces. To do this, however, subordinate commanders must be given "terrain objectives" toward which they move.

2. **Offensive:** Seize, retain and exploit the initiative. A military force cannot expect to win a war by taking the defensive. Success comes to those who aggressively move forward, catching the enemy off-guard to force it to surrender or terminate his resistance.

3. **Mass:** Mass the effects of overwhelming combat power at the decisive place and time. Mass in this sense does not mean "more men." "Military superiority" can be attained against a numerically superior enemy if you have superiority in such things as weapons, leadership, morale, and training. "Mass" is generally gained by "manoeuvre."

4. **Economy of Force:** Employ all combat power available in the most effective way possible by allocating minimum power to secondary efforts. This is a somewhat misleading term. It does not mean "do the job with minimum combat power." The principle pertains to "secondary efforts" and implies that don't fritter away power in tackling them, instead use it to achieve superiority at places where it matters.

5. **Unity of Command:** For every objective, seek unity of command and unity of effort. It means that all forces are placed under one commander. The commander has authority to direct all the forces to one purpose. The idea is to ensure optimal cooperation between the many commanders of all the various units and branches, which may have different views of the situation, different tactics and doctrines. This obviously results in better cooperation between the units under his command.

6. **Security:** Never permit the enemy to acquire unexpected advantage. Security entails reducing vulnerability to hostile acts, influence or surprise.

7. **Surprise:** Strike the enemy at a time or place or in a manner for which it is not prepared. The idea is to use secrecy, speed, and deception to achieve the objective in a way that the enemy will be unable to efficiently resist. The effectiveness of the surprise attack is, firstly, destruction of the enemy's intangible combat power through spiritual impact, that is, aiming at

confusion of command, lowered morale, etc; and, secondly, through swift strike, making difficult the application of the enemy's tangible combat power viz personnel, weapons, etc.

8. **Simplicity:** Prepare clear, simple orders and plans to ensure common understanding. Since battle is so complex and unpredictable, complex plans almost always fail. To succeed, a battle plan must be simple. Simple to understand, simple to execute and simple to adapt to changes.

9. **Manoeuvre:** Place the enemy in a position of disadvantage through the flexible application of combat power. Move your forces before and during battle in such a way so as to produce local superiority which is often a key for victory.

The UK armed forces have ten principles included in their doctrine. Most of them are common with those of the US but perhaps differently worded. The ten principles are:

1. **Selection and Maintenance of the Aim:** The aim remains the cardinal principle of war. It is essential to define the aim clearly.

2. **Offensive Action:** It is the chief means open to a commander to influence the outcome of a campaign or a battle.

3. **Concentration of Force:** Military success will normally result from the concentration of force, at the decisive time and place. The 4F principles in combat power application are find, fix, fight and finish. Concentration of force is the assembling of as much as possible of one's combat power and its integrated application at critical times and places.

4. **Economy of Effort:** Decisive strength is to be concentrated at the critical time and place and there must be no expenditure of effort where it does not affect the issue.

5. **Flexibility:** The commander must be able to make decisions on the basis of situations which cannot be foreseen. A balanced reserve is needed for tactical or operational flexibility.

6. **Security:** A degree of security by physical protection and denial of information detail is essential to all military operations.

7. **Surprise:** It is a vital ingredient of success in modern warfare.

8. **Cooperation:** It entails the coordination of the activities of all arms of the Services and of allies for optimum, combined effort.

9. **Administration:** Sound administration is needed for the success of any operation. Logistic considerations are often the deciding factors during operations.

10. **Morale:** Morale is probably the most important element of war. High morale fosters offensive spirit and the will to win.

The South African Army has fourteen principles of war. These more or less are a combination of the principles of the US and UK. Their principles are as follows:

1. **Selection and Maintenance of the Aim:** All military activity must be directed to a clearly defined goal and must contribute to the attainment of that goal.

2. **Offensive Action:** The offensive is used to secure the initiative, to maintain freedom of action and to impose one's will on the enemy.

3. **Concentration of Force:** The principle requires superiority of combat power at the critical place and time for a decisive purpose. Concentration must be rapid and secret so that the enemy has too little time to react before the decisive strike is delivered. From this principle, it can be concluded that forces must be dispersed at the proper time and place for security and speed of movement.

4. **Economy of Force:** The principle requires allocation of combat power in such a manner that all tasks are achieved effectively. Focus the right amount of force at the right time at the right location.

5. **Flexibility:** Modern war demands flexibility to enable pre-arranged plans to be altered to meet changing situations. It calls for mobility of a high order, both tactically and strategically.

6. **Unity of Command:** It should ensure unity of effort and thus apply maximum power against the objective at the decisive time and place.

7. **Security:** Active steps must be taken to deny the enemy information which enables him to achieve surprise. Security also means ensuring the safety and integrity of forces and certain non-combatants during all phases of the operation.

8. **Surprise:** Surprise can be achieved both strategically and tactically. Every effort must be made to surprise the enemy and guard against being surprised.

9. **Cooperation:** It entails the coordination of all arms of the Services, army corps and units so as to achieve the maximum effort.

10. **Logistic Support:** It must be so designed as to give the commander freedom of action.

11. **Maintenance of Morale:** Soldiers must be well-trained, well-administered, physically fit and imbued with high morale to achieve the aim.

12. **Manoeuvre:** It is the movement of combat power to provide concentration at the proper time and place to achieve the mission.

13. **Administration:** Without meticulous administration, the chances of success of any operation are quite remote. It is very important to make a very comprehensive administrative plan before embarking on any operation.

14. **Maintenance of Reserves:** A reserve must be established and as soon as it is committed, a new reserve must be organised.

The article further states that subsequently the South African Army added intelligence to the list of principles of war. This was done in the 1990s. In view of the tremendous increase in the availability of information which can be processed to provide intelligence, this would seem to have been a sound decision. The US Army has included intelligence under "combat functions."

The fact that the US has nine principles, the UK ten and the South African Army 15, makes clear that each one of them has given a rethink and added or subtracted some of them from the original list projected by Clausewitz. The Americans probably have taken a minimalist approach and kept the list short while the South Africans decided to have a longer list, opting for clarity.

The US does not have flexibility, cooperation, administration and morale as principles but certainly gives them due importance in their other documents on conduct of operations. Morale is inferred under leadership and discipline, whilst cooperation is covered under unity of command. Though forerunners and world leaders in the aspect of logistical matters, the US does not state logistics as an independent principle but has covered it comprehensively under combat functions.

Most doctrines hold the selection and maintenance of the aim to be the controlling and most important principle of war. If the aim is not correctly selected and then maintained, the other principles become meaningless.

The UK and South Africa do not include simplicity as a principle but refer to the requirement many times when explaining other principles. The South Africans, as an afterthought and perhaps influenced by the US, have added the principles of unity of command and manoeuvre to their list of principles of war. It will be interesting to note that only the South Africans have maintenance of reserves as one of the principles of war. Their experience has obviously convinced them of the importance of maintaining adequate reserves, particularly for taking up area defensive positions.

An important point to note is that the US, UK and South African Army doctrines hold the selection and maintenance of the aim to be the controlling and most important principle of war. If the aim is not correctly selected and then maintained, the other principles become meaningless. The aim states what is to be achieved, while the other principles are the guides as to how the aim is to be achieved. At the top of the list of the US Army is the principle of the objective. The British regard selection and maintenance of the aim as the master principle. The others have no particular sequence of importance but all must be considered before any operation.

Let us now consider one by one the principles which may be relevant to the modern wars and decide which ones need modification, which ones to discard and which new ones to add.

1. **Mass:** This principle, by and large, implied, "Get there first with the most." This principle was definitely applicable in the good old days when numerical superiority at the point of impact mattered and when not much difference existed in the technological levels possessed by the two opposing sides. But is it valid today? Or is accuracy more relevant than mass? We often talk of lean and mean force, implying that quality rather than quantity matters. It was

always said that military success will normally result from the concentration of force, at the decisive time and place. This statement needs to be modified to read that military success will normally result from successful precision attacks on the centre of gravity (CoG) of the enemy. Mass destruction needs to be replaced by precision destruction. The recent wars in Iraq and Afghanistan have further demonstrated the applicability of the above, wherein requisite combat power was attained with a lesser concentration of forces than would have been the case earlier, by a corresponding increase in precision strike, destructive power and mobility of the forces used. In my opinion, we need to change this principle from mass to **precision**.

2. **Selection and Maintenance of the Aim:** This principle implied, "Choose an aim or objective and stick with it." Again debatable. Selection of aim must remain the cardinal principle of war; however, it is necessary to ensure that the definition of this aim is unambiguous. But should maintenance of this aim be treated as a must? Or should this stated aim be modified and refined with changing circumstances as the war progresses, particularly in a long drawn war? One classic example which highlights the disadvantages of sticking to this principle is the Iraq War waged by Bush. There was a stated aim and probably there was more than one ulterior aim or one may teem them as objectives or intentions. But, in any case, the aim was not well defined and lacked clarity. Also, when it became apparent that it was no longer possible to achieve the stated aim, it was not modified. In the case of the war in Vietnam, the US president declared that the aim of the war was not to win but rather to preserve the independence of South Vietnam. The aim was, thus, unclear and unattainable, particularly because of the limitations imposed by the politicians ignoring the principles. The US adopted a defensive strategy and the freedom of South Vietnam could last only as long as the US was prepared to provide the means to man the defensive posture. This principle, therefore, needs to be reworded as **"selection and periodic review of the selected aim."** This would be more applicable in long drawn wars.

3. **Unity of Command:** This principle implies "Place your entire force under the command of a single entity." It also implies cooperation, meaning making a

combined plan of operation. It entails the coordination of the activities of all arms of the Services and of allies for optimum, combined effort. But the magic word which is lacking in this is "integration". It is a unanimously accepted fact that all future wars will have to be fought jointly by two or more Services. It is, therefore, very important to integrate them well in time, create joint integrated structures, ensure interoperability of their equipment and ensure a joint doctrine for their guidance. In my opinion, it would, thus, be more appropriate to rename this principle as **"integrated joint operations."**

4. **Economy of Effort:** The essence of this principle shall perhaps stay evergreen. In my opinion, it engulfs the principle of concentration of force as well. Economy of effort implies that just about enough (and no more) decisive strength is concentrated at the critical time and place and there must be no expenditure of effort where it does not affect the outcome of war. The significance of this principle is perhaps gathering more importance as the weapons are getting costlier day by day. In many cases, they have already become unaffordable, hence, it is very important that procurement is done judiciously and expenditure of weapons is wisely controlled. However, as brought out earlier, I feel that the term "economy of effort" tends to covey a wrong impression of saving on overall effort, almost amounting to saying be stingy. The principle, however, relates to secondary efforts and implies that don't fritter away power in tackling them, instead, use it to achieve superiority at places where it matters. I feel we need to rename it as "**optimum use of effort."**

5. **OODA Loop:** This is the latest jargon and did not exist when Clausewitz framed his principles of war but I think in today's context, we need to include this in our latest list of the principles. Victory will generally go to the side which has a shorter observe, orient, decide, act (OODA) cycle. An efficient OODA loop implies good surveillance, effective reconnaissance, smart intelligence, integrated reliable networking, speed, proper reaction, high probability of destruction and, finally, prompt battle damage. I think an **efficient OODA loop** deserves a place in the revised list of principles.

6. **Air Superiority:** In the days of Clausewitz, air power did not exist, as such no

thought could be given to this very important aspect of warfare. If the formulation of principles of war is to be determined after careful debate and study of past wars, then the recent wars would indicate that air power has played a very crucial and decisive role in most of the conflicts and wars fought post-World War II. Each war has brought in its wake many new ideas which have altered the existing philosophies, doctrines and strategies in the employment of air power. Creation of air superiority, if not air supremacy, or at least a favourable air situation would deserve a place amongst the principles for fighting a modern war. This principle, if neglected, would almost certainly result in defeat.

7. **Disruptive Capability:** As the weapons and other means of conducting war are getting more and more hi-tech, their vulnerability to jamming and other disruptive actions is proportionately increasing. A small glitch injected in the network can immensely reduce the warfighting capability of the adversary. Today, a hi-tech fighter aircraft fleet can be grounded by destroying the engineering complex rather than by trying to shoot them down or by attacking the runway and damaging it. I think a good, effective **disruptive capability** can work as a powerful weapon by itself and should, therefore, rightfully find a place as one of the principles of war.

8. **Information Dominance:** This perhaps can be looked at as a part of disruptive capability. Adequate information is critical for effective planning and execution of combat operations. Safeguarding own information, denying it to the enemy and, at the same time, corrupting his information, in other words, winning the information warfare can cause total disruption and paralysis of the opponent and that too without having to fire a bullet. Modern wars are going to get more and more information dominant and it is often said that information warfare will be the start point and its outcome will govern the final victory. I, therefore, think that **information dominance** needs a special mention as a principle by itself.

9. **Survivability:** This is a counter to the disruptive ability of the enemy. The various warfighting assets must be able to survive the enemy attacks. If we talk of second strike capability, then this becomes all the more important.

Survivability of personnel against non-conventional attacks, of equipment against attacks such as the e-bomb become critical issues. These issues did not exist two centuries ago when Clausewitz thought of recommending his principles of war. It is perhaps time now for us to include **survivability** as one of the principles.

10. **Surprise:** Yet another evergreen principle. It is said that nearly half the war can be won by paralysing the enemy through surprise. Surprise implies doing something which the enemy least expects. Surprise is acting in an unpredictable fashion, keeping the enemy guessing about your intentions. It is almost like catching the enemy napping. "Attack when and where the enemy least expects it." It can put the enemy totally off-balance, and, thus, prove to be a great force multiplier to provide the decisive edge at strategic, operational and tactical levels of warfare. It, however, needs to be realised that in today's near transparent battlefield environment, because of high quality surveillance, it will be increasingly difficult to execute surprise; nevertheless, it should be possible and, therefore, we need to retain this principle.

11. **Logistics Support:** Logistic considerations are often the deciding factors during operations. Sound administration is needed for the success of any operation. Sound administration of logistics implies that the right things are made available at the right places in the quickest time-frame and in the most cost-effective way. Today's wars are expected to be short but fierce. Hence, it is all the more important to make a very detailed and well thought out integrated logistics plan to meet the various requirements. This would be a very important ingredient in generating and sustaining the pace and tempo of operations. In my opinion, it continues to be a very important principle of war.

12. **Technology:** Modern wars are actually hi-tech wars. He who has better technology is expected to win. If that be so, then we need to give due importance to this aspect. There are many examples in history to show how technological inventions have changed the course of a battle, how technological surprises have tilted the balance of power. I feel it deserves a special mention as one of the principles of modern warfare.

The above analysis indicates that because of change in the texture of modern wars and many other factors, there is a need to rethink about the principles of war as quoted by Clausewitz. I would recommend the new list of the principles as follows:

- Selection and periodic review of the selected aim.
- Precision approach.
- Integrated joint operations.
- Optimum use of effort.
- OODA loop.
- Air superiority.
- Disruptive capability.
- Information dominance.
- Survivability.
- Surprise.
- Logistic support.
- Technology.

There are many other principles which are talked of by many other countries but I feel those are minor, and in today's context, do not qualify for a special separate mention as principles of war. Quite a few of them are, in any case, inherently included in the principles quoted above.

The above principles relate to conventional wars. What about unconventional wars, also known as asymmetric wars? Would the above principles be equally relevant to such subversive covert wars involving terrorism, militancy, insurgency, etc, or do we need to enumerate separate principles for them? This kind of warfare may take place in own territory and impose limitations on the applicability of the above stated principles. Some of these principles, with slight amendments, may still retain their validity but, overall, I would recommend, that we should lay down separate

Dedicated intelligence organisations need to be geared up and a comprehensive integrated intelligence picture needs to be created.

principles for such undefined, abstract, complex, so-called wars after conducting deep study and meaningful discussions. In my opinion, information warfare, more covert, rather than overt, should get the highest priority, followed by reconnaissance. Dedicated intelligence organisations need to be geared up and a comprehensive integrated intelligence picture needs to be created. Special forces, with specialised training and equipment, need to be formed.

In conclusion, it may be said that the present list of the principles of war, as stated by Clausewitz and promulgated by many countries, had been tailored to the wars during the Napoleonic era. The texture, nature and spectrum of recent wars have undergone a significant change. This has resulted in the creation of new doctrines and strategies but somehow the archaic principles of war have not been updated. It is felt that the applicability of these principles to the present and future wars has appreciably reduced. There is, therefore, a need to review them and devise new principles which would be of greater relevance to modern wars.

EFFECT-BASED OPERATIONS

VINOD PATNEY

People do not change when you tell them that there is a better option.
They change when they conclude that they have no other option.
                                                    – Michael Mandelbaum

INTRODUCTION

Bertrand Russell once stated that "the point of philosophy is to start with something so simple as not to seem worth stating and to end with something so paradoxical that no one will believe it." In a discussion on "effect–based operations" (EBO), the first part of the statement is indeed applicable but, hopefully, the reader will see merit in the philosophy as it unfolds.

Warfare, in simple terms, is an attempt at imposition of will, or at coercion. The damage caused by military means, and the nature and extent of the likely damage that could ensue, is intended to force the adversary to submit. This is a simplistic formulation but the general principle is valid. What is important is the defined objective of the adversaries and the extent to which the objectives are met by military action or a series of such actions. The war or conflict can end only when a set of objectives or altered objectives are met and conceded. Implicit in this statement is the appreciation that objectives do alter as the conflict continues. As there is both a tangible and psychological element involved in

Air Marshal **Vinod Patney,** SUYSM PVSM AVSM VM (Retd.), former Vice Chief of Air Staff, was Air Officer Commanding-in-Chief of Western Air Command, IAF.

In a manner of speaking, damage is incidental to the "effect" it causes although the "effect" may be the result of the damage caused.

cessation of conflict, the effect of a mission(s) or of courses of action adopted is far more important than the actual damage caused. In a manner of speaking, damage is incidental to the "effect" it causes although the "effect" may be the result of the damage caused. Seen in this light, it can be argued that every mission launched is based on a desired effect that we hope will be perceived by the adversary in a desired fashion. The argument can be carried further by inferring that all military actions have always been ordered to create a desired outcome. Hence, the question: what is novel about EBO? There is no direct or easy answer. To begin with, there is limited empirical data to validate the concept. The possible applicability of EBO in different wars can and will be examined in this paper to facilitate understanding but it is a moot point if, so far, EBO was ever used to provide the major input in determining the manner in which the conflict should be prosecuted, and thereafter plans made on the basis of such determination. EBO remains a largely untried concept. However, planners have begun to appreciate the value of EBO as a valuable tool. This has come about as a result of the rapid increase in technology that heralded the revolution in military affairs (RMA), and the consequent distinct change in the nature and conduct of war. The concept shows promise but requires considerable support from many agencies of government.

In a RAND report dated 2001, sponsored by the Office of the US Secretary of State and the US Air Force (USAF), it is stated that towards the end of the Vietnam War "young USAF officers were appalled by the mindless use of air power in Vietnam." Seen in the light of capabilities that are taken for granted today, at that time, the potential of air power was not much in evidence. The potential was understood but the technology available was insufficient. The technological possibilities were explored in earnest and RMA resulted. RMA is essentially based on greater air power capabilities, with emphasis on longer reach, stealth, speed, precision and lethality. As better use of air power became possible, concepts developed and were honed with still increasing air power

capabilities. Concepts like follow-on forces attack became feasible, a new air-land battle doctrine came into being, and soon the concept of parallel war was developed. The conduct of war altered very markedly starting from the 1991 Gulf War, and the process of change and heightened effectiveness has continued. Earlier, perforce, the antagonists engaged in attrition warfare, but far more options are now available. With ever greater use of space and the introduction of network-centric warfare (NCW), a still newer form of military revolution is being introduced. Technological progress is indeed accelerating and major transformations that will markedly alter military capabilities are on the anvil. EBO is now feasible and represents the natural progression.

The more effective use of weapon systems and the ability to hit targets throughout the length and breadth of the country increases the options available. The nature and conduct of war have also altered to stay in tune with present day realities. Conflict is now a multi-dimensional exercise involving not only the military but also diplomacy, politics, economic considerations, the media, and science and technology, etc. Indeed, the salience of military action has possibly reduced. Be that as it may, the nature of threats has changed markedly and so have the means to combat them. A multi-disciplinary approach is called for and EBO is the more efficient means of conducting warfare or as an approach to prosecuting conflict.

CONCEPT OF EBO

A good definition of EBO is as given in the RAND study referred to earlier. It states that "EBO are operations conceived and planned in a systems framework that considers the full range of direct, indirect and cascading effects, which may – with different degrees of probability – be achieved by the application of military, diplomatic, psychological, and economic instruments." Another definition that is complementary in a fashion is as given in the article on "EBO and Counter Terrorism" in the Fall 2005 edition of the *Air and Space Power* journal. In the article, EBO is defined as a conceptual process "for obtaining a desired outcome or 'effect' on the enemy, through the synergistic, multiplicative, and cumulative application of the full range of

military and non-military capabilities." Both the definitions taken together represent the essence of EBO.

In early 1990, USAF Col John Warden spoke of the enemy as a system and future wars as parallel wars that took into account the full ambit of national power. The beginning of the EBO thought process could be linked to Warden's work. In June 2000, the US military concluded experiments on rapid decisive operations. The term is self-explanatory and naturally led on to the study of EBO in some detail. In simple terms, EBO theory suggests that 'effects' on the enemy are more important than the attainment or otherwise of military objectives or even mission objectives. In recent times, the validity of the concept has been brought home to us in a telling manner. Military successes, indeed military victories, in both Iraq and Afghanistan, were readily achieved, but the war is yet to be won. A similar situation obtained at the end of the Vietnam War. Militarily, the war was won in a convincing fashion but few would call the way the Vietnam War ended a successful conclusion. The Arab Israel War of 1967 is another example. From the Israeli point of view, it was a brilliant victory, lauded all over the world, but the problem that the war was intended to solve still defies a solution. There has been a near continuous Arab-Israeli conflict since then and the problem continues to pose a serious challenge. Can we call the conclusion of the 1967 War a success? There are bound to be differing opinions on that score. The point that must be made is that military victory by itself is insufficient and could even be irrelevant.

KOSOVO CONFLICT, MARCH 24 -JUNE 9, 1999

An example of a conflict where it is suggested that the war was unequivocally won is that of the Kosovo conflict of March to June 1999. An examination of this conflict is a good vehicle to understand EBO.

The war objective was clear and succinct: Milosovic must be made to accede to the North Atlantic Treaty Organisation's (NATO's) conditions. Towards the fulfillment of this objective, besides coercion and the use of the military, diplomacy, economic considerations, political aspects and the media played a part. The total ambit of power was used, as it should be when EBO is intended.

Diplomacy played a part in ensuring a hands-off approach by other countries even though there was no express UN sanction for the war. Other initiatives that merit mention are:

- Russia was successfully urged to convince Milosovic on the futility of continued resistance.
- Kosovo Albanians were used to hit targets inside Kosovo to increase the problems of Serbia.
- In spite of many NATO countries pulling different ways in terms of target selection and the manner of waging war, the inherent solidarity of NATO was successfully demonstrated. No major chinks in inherent unity came to light that Serbia could have exploited.
- Economically, sanctions were imposed and they were not seriously flouted by any NATO or other power.

Under the broad ambit of political aspects, the intention was to degrade Milosevic's command and control arrangements. At the same time, civilian targets were chosen for destruction with a view to destroy the infrastructure and threaten the very way of life of the Serbians. Implicit in the continued air attacks was the threat that the Serbians had more to lose if they were not to surrender.

The media built up and maintained the hype that it was a justified cause as the Albanians were being slaughtered. Also, the media emphasised the inevitability of defeat and the inadvisability of continuing the war and being subjected to consequent even greater destruction.

The military objectives were to degrade the Serbians' ability to resupply their forces, gain air supremacy and degrade enemy ability to continue the conflict. This was achieved by air attacks on strategic targets, infrastructure, fielded forces, industry, and command and control systems at both military and national levels. At the same time, to ensure continuance of NATO solidarity, it was essential to ensure minimum attrition of own forces. All this was achieved in large measure and it would not have been possible without the extant air power capability. RMA was effectively used.

Minimum attrition was achieved as the Allies operated above the danger

heights of Serbian air defences and only air power was used. Every war is unique and requires a unique solution. Although such an operation may not ever be repeated, the campaign brought to light the manner in which air power can be used to advantage. Be that as it may, the very obvious build-up of NATO ground forces for an inevitable attack was another significant coercive factor.

Undoubtedly, the Allies enjoyed tremendous superiority and there was never any doubt about the military victory. The Allied forces had overwhelming power, near inexhaustible economic strength, freedom to choose the time of attack and determine the pace of war. There was considerable flexibility in planning for war. The Allies had the time for detailed deliberations and, if required, examine or game plan the different courses of action that may be needed. They had reasonably good intelligence on targets, target systems, and their vulnerabilities. Intelligence was also able to provide near immediate information on results of a mission and its impact. This facilitated future planning. The enemy psychology was fairly well understood and the knowledge used effectively. In short, it was an unequal battle, with the Serbians totally on the defensive. Such asymmetry in capabilities and other advantages are unlikely to be ever available to most future protagonists.

The Kosovo conflict is often quoted as an example of the successful use of the EBO theory. If the conduct and the progress of the conflict was well thought out before the war started, and adequate contingency planning was also carried out to cater for situations that do not pan out as per plan, then, as the stated objective of getting Milosovic to surrender was achieved, it can be averred that the system of EBO was validated. The contingency planning referred to concerns not only the military but all the other non-military aspects discussed earlier. This point is being reiterated as there is a general tendency to fit the results to what should have been the planning process.

Another issue that bears examination is the choice of the objective. Was it far too limited? No value judgements are intended, but it is a moot point as to whether the results achieved were good enough. What was the purpose of starting the conflict? Was it regime change, or a better life for the Albanians or the independence of Kosovo from Serbia? Interestingly, although the ground forces were not used to get

Milosovic to surrender, NATO ground troops moved into Kosovo immediately thereafter to maintain the peace and are still there. Surely, the long stay was not part of the plan or the contingency plan. Hence, the question must be asked as to whether the choice of objective was correct and adequate. There are no easy answers but an analysis will help better use of EBO in the future.

CONFLICT IN LEBANON, JULY 12-AUGUST 14, 2006

The problems in the correct determination of the objective was brought home in telling fashion in the conduct of the recent Lebanon conflict, as seen through Israeli eyes. Militarily, the Israeli operations were very successful, but the 'war' was far from won. The objectives of the war were probably far too ambitious if the intention was to decimate the Hezbollah once and for all. Again, may be, enough intelligence on Hezbollah positions, plans, capabilities and psychology was not available. More importantly, the adverse impact of not meeting the objectives on the proverbial Israeli invincibility was not fully considered. Again, diplomatic moves that delayed the ceasefire turned out to be unhelpful. It is true that all this is being stated with the benefit of hindsight, but the point must be made that planning for EBO, if attempted, has to take into account all these issues and more.

As in the case of the Kosovo conflict, the military superiority of the Allies/Israelis was beyond question. When such a situation does not obtain, use of EBO theory in the planning of operations becomes far more difficult. Possibly the most difficult issue is to decide on the objectives desired.

CHOICE OF OBJECTIVES

It will be simplistic to suggest that the objectives must first be established and then the plan or plans can be worked out to achieve the objectives. The danger in this approach lies in the fact that it takes for granted that the chosen objectives can and will be achieved. War is at least a two-sided game and seldom, if ever, can such assurances be given or assumed. In the light of recent conflicts, there is no need to belabour this point any further. The argument takes on added importance when two nearly evenly matched protagonists are involved. Yet, the

intention of the adversaries must be to "end the war" in a better position than when it started. In some cases, even a stalemate situation could be acceptable. If a stalemate does not result or cannot be ensured, the losing side will attempt to cut its losses and then try and get ready for another battle.

The term "end the war" as used above refers to only the active use of militaries. In today's world, where globalisation effects are becoming more pronounced and competition is becoming stronger and continuous, individual national interests will always be in near continuous conflict, the often repeated phrase that borders are becoming irrelevant notwithstanding. Self-interest has to be the guiding concern, but the concept of self-interest is equally applicable to our adversaries. The approach to such conflicts has to be multi-dimensional and highly nuanced. The work of all organs of government impinges on national security in one form or the other although the backing of an adequate military power is essential in international relations even if its use is limited in time and space.

As conflict, in the broader sense, is continuous, the prosecution of conflict is also continuous. The study and gradual implementation of the EBO system will be helpful; particularly so when deterrence or coercion has not had the desired effect and use of armed forces is contemplated. All organs of government must work together to fashion the objectives to be met. The feasibility and probability of different approaches have to be considered before the objectives are finalised. At the same time, the probability of failure or partial failure, and action to be taken under such or similar eventualities should be studied beforehand and contingency plans formulated. The suggestion may seem overly theoretical and time consuming but it can be compressed in time, particularly if the planning process has been proper and updated regularly. The military objectives selected may remain unaltered throughout the military conflict but what is more likely is that they would have to be altered in the light of actual circumstances or situations. Similarly, the diplomatic and

Change in objectives may be required and, in time sensitive situations, the existence of a planning system with real-time inputs will be needed.

economic initiatives will probably be in a state of continuous flux. Change in objectives may be required and, in time sensitive situations, the existence of a planning system with real-time inputs will be needed.

It must be emphasised that the selected objectives should be based on the desired end state and be assessed as feasible. Thereafter, as the conflict is under way, more information will become available and the objectives may have to be revised. The conflict should be prosecuted along these new lines. However, an overly optimistic view of our capabilities, bordering on adventurism, is avoidable and a highly conservative view is probably worse. Rationality in determining objectives is needed but it can be empirically shown that in war, an offensive approach generally yields better results. The manner of use of the armed forces by India during the 1999 Kargil conflict and thereafter during Operation Parakaram in 2001-2002 should be examined in this light. The important point to address is as to whether the end state could and should have been better from both military and non-military points of view. The lessons that may be learnt could help in our use of EBO in the future.

NATURE OF EBO

By its very nature, EBO calls for a fresh look at the manner in which we employ and use armed forces. The quest (of EBO) should be for means that will get the desired results in the most cost-effective manner, as efficiently as possible and in the shortest possible time.

With globalisation, a war anywhere in the world has an impact on most other places. Hence, unless the superpower is involved, a war in the conventional sense, per force, is likely to be limited in terms of area, objectives, time and geographical coverage. International pressures will intervene to try and stop the combat at the earliest. If we want a little more time to gain the desired ends, our diplomacy has to be more effective. Such limited sub-conventional wars have dynamics

> The quest (of EBO) should be for means that will get the desired results in the most cost-effective manner, as efficiently as possible and in the shortest possible time.

of their own, the most important of which is the need to achieve results quickly and end the war. The losing side is unlikely to easily accept ending the war at a disadvantage. Hence, the ability to affect escalation control if not escalation dominance is a very significant factor. Such escalation control or dominance is not easy to come by but it is essential that the point is carefully considered in the planning process where EBO considerations are to be applied. Possibly, escalation control will be facilitated if the objectives are limited and do not markedly alter the status quo. It is also opined that aerospace power must be the military option of choice to ensure that escalation is controlled. Non-military means can also play a significant role in controlling or limiting escalation. A comprehensive strategy is required.

In time sensitive operations, attrition warfare has to give way to parallel war where the entire country of the adversary is under threat and the options available in choosing targets and target systems increase manifold. Such an approach will also have beneficial psychological effects that could shorten the conflict, particularly if the command and control set-up and civilian infrastructure of the adversary are systematically attacked. There is also a growing international abhorrence of collateral damage. Hence, air power should be the instrument of choice because of its characteristics of ubiquity, speed, reach, precision and lethality. However, it bears mention that precision attacks are a double-edged weapon. They certainly are very impressive, even awe inspiring, but the novelty wears off rapidly. They are soon also viewed as 'safe' by the civilian population as there is little collateral damage and one just has to stay a little away from the likely targets. The shock and awe effect is reduced and so is the psychological impact. All these considerations have to be taken into account whilst planning for conflict on the basis of EBO.

By definition, EBO relies on both direct and indirect effects. One very good example of the impact of an indirect effect was the result of the air attack on the

By definition, EBO relies on both direct and indirect effects. Government House in Dhaka in December 1971. Some damage did accrue to the Government House, but far more importantly, the attack led to the near immediate surrender

by East Pakistan forces and the consequent birth of Bangladesh. It is true that the result was probably beyond the expectations of the planners and commanders, but the attack exemplifies EBO in action. Such possibilities do occur in war and commanders must be astute to seize them. A surrender may not result in every case but a greater effect than the damage caused or a cascading series of effects is the essence of EBO.

EBO techniques can be usefully employed in counter-terrorism operations or fourth generation warfare. It is in the nature of such warfare that the terrorists are at some advantage. The initiative largely lies with them. They defy the normal tenets of warfare amongst nations and have altered the nature of war. The war is now an ongoing phenomenon, and what is worse, the terrorists are honing their skills and becoming more adept at asymmetric warfare. They can now operate in small, near autonomous bands, less affected by logistics, and can operate outside national boundaries as well. Terms such as "state sponsored terrorism" and activities of "non-state actors" are now in common use. War and crime, including 'white collar' crime are becoming inter-related. Possibly, a studied and more imaginative formulation of a strategy for counter-terrorism has to be adopted. The armed forces could also be used more effectively.

Terrorism can no longer be fought at the tactical or operational level although such actions have to be part of the overall ambit of counter-terrorism operations. The operations have to be planned at the strategic, diplomatic, economic and political levels. As a number of agencies are involved, EBO tenets can be used to advantage. Counter-terrorism operations cannot be restrictive and have to encompass many organs of government. A more integrated approach is required but it is not easy to do so. The large number of agencies that have to contribute to the overall plan will have multiple perspectives, differing goals, and even a reluctance to accept another point of view, leave alone many diverse points of view. Unless the differences are narrowed, uncertainties will abound and it will be difficult to bring about

Terrorism can no longer be fought at the tactical or operational level although such actions have to be part of the overall ambit of counter-terrorism operations.

coordinated activities that are time specific. Only training, exercising together, and the build-up of mutual confidence will help. EBO can provide the necessary framework for greater understanding and integration. It is suggested that the armed forces should take the lead to bring about the desired integration.

APPLICABILITY OF EBO IN INDIAN CONTEXT
The philosophy of EBO has not really taken root in our planning processes but the armed forces can take the lead in propagating the concept. EBO is result oriented and favours an integrated approach. It follows that the effectiveness of our armed forces should increase with the use of EBO as the planning tool.

The armed forces should be able to adopt the EBO planning process readily as EBO operates in the strategic domain. The broad strategy can be discussed based on requirements and capabilities, and formalised. The strategic objectives must include what is required and, probably more importantly, situations that must be avoided. Thereafter, there should be little differences in fashioning the operational and tactical utilisation of the armed forces.

The primary aim of the armed forces is to deter or coerce. Deterrence and coercion is a function of how the adversary perceives our capability and the resolve to use it. The impact will diminish once armed forces are used but, for escalation control, it is important that we continue to deter or coerce the enemy. At all stages, the enemy must perceive the pervasive threat of military action, particularly the potential of air power.

As conflict amongst nations is near continuous even though it can take many forms, including non-military considerations, an organisation is needed to constantly monitor the results of actions taken and fashion multi-disciplinary responses. Such an organisation is not likely to take shape without much deliberations and effort but it is essential to the practice of EBO. The aim must be to use all available assets to formulate and then meet defined objectives with the use of synergistic and well orchestrated actions at multiple levels.

If EBO is to be used for contingency planning by the armed forces, the adversary must be viewed as a complex adaptive system.

If EBO is to be used for contingency planning by the armed forces, the adversary must be viewed as a complex adaptive system. Possibly, the enemy systems should then be studied to establish their centres of gravity and how to target them. This will be a painstaking exercise but should prove rewarding. The post-war scene must be kept in view and attempts made to seek alternatives to direct attacks. In any case, attrition must be contained. In deciding courses of action, "ends" should take priority over "means". It will be seen that the system of contingency planning advocated is far more complex and of a higher order. Once again, the planning process will be incomplete without the establishment of an organisation for continuous appraisal of results and the charter to formulate responses to changed situations. The inherent flexibility of air power can be used to advantage.

INHERENT LIMITATIONS TO ADOPTING EBO IN INDIA

Use of EBO requires a different set of norms and organisation. Plain inertia will delay the process of acceptance of the concept. The fact that it is a largely untried system implies that the converts will be few and far between. Many limitations will be mentioned. To begin with, the system requires detailed knowledge of the adversary/possible adversaries, including their psychology and the manner in which they are likely to react. Much more sophisticated intelligence apparatus is called for, with infrastructure for real-time analysis and dissemination. The intelligence requirements are not on a one time basis or even periodical but, preferably, there should be a system of near continuous collection, collation, analysis, assessment and dissemination of information. This is certainly desired on high priority aspects. It is a tall order.

Intelligence information about the adversaries can never be complete. There will always be uncertainties and we have to learn to plan and execute missions in spite of the 'unknowns' in war. What is probably even more important is that there is bound to be an increasing need to operate in an environment of uncertainties that can take many forms. We have to learn to live with the

Intelligence information about the adversaries can never be complete.

situation. A responsive mind that can use information intelligently, and quick, may be even instinctive, decision-making qualities are prerequisites. Training for the purpose is required at all levels of the military hierarchy or government.

Acceptance of any new idea faces many challenges. In the case of EBO, the novelty is coupled with some stringent limitations that have to be overcome. The recommended course of action is to examine the concept more fully, note the obvious advantages and work towards progressively greater use of EBO as the limitations are addressed and greater acceptance occurs.

CONCLUSION

EBO is a logical process that views the enemy as a system. It is a new approach to planning and prosecution of conflict by multi-disciplinary organs of government operating in unison and, thereby, using the potential of the different organs both optimally and synergistically. The importance of looking at the end of war situation should help tailor our responses more realistically, with due emphasis on non-lethal means of achieving our objectives.

The planning process will certainly gain by adopting EBO. It has validity throughout the spectrum of conflict and is the cost-effective means of achieving results. Although it will take some years for the full ambit of EBO to be introduced, the introduction of even a limited scope EBO system will highlight, in a rational manner, the areas that require greater attention in terms of equipment, training, information gathering, etc. The obvious follow-on corollary is that EBO will also aid better force structure planning. The concept of EBO is no longer premature but demands immediate attention. Some modifications to the system will be required to suit individual needs but that should not detract from the general acceptance of a useful concept.

FROM WINNING TO DETERRING: CHINA'S CHANGING DISCOURSE ON DEFENCE

SRIKANTH KONDAPALLI

INTRODUCTION

In the last decade, China has sought to express its views on national and international issues of concern through White Papers on several subjects. Although its official work reports to the National People's Congress, Communist Party documents and others did contain such views earlier, issuing White Papers has been only a recent phenomenon. As concerns on China's rise in economic and military areas have become acute, these White Papers are supposed to address such concerns. In the five White Papers on national defence from 1998 to 2006 and one more dealing with arms control and disarmament in 1995, China elaborated its views on the subject. These have been critically examined and evaluated by the international community and analysts.[1] Major policy

---

Srikanth Kondapalli is Associate Professor in Chinese Studies, at CEAS, SIS, JNU, New Delhi.

1. The US Department of Defence had initiated an annual assessment of the Chinese military developments. Based on intelligence materials, these are comprehensive in nature from the point of view of military strategy and technological improvements in China. Dennis J. Blasko attempted to critically outline the nuances involved in the four White Papers till 2004 in "China's Defense White Paper for 2004 -No Change to Policy or Portents of the Future?" *Freeman Report,* January 2005 (Washington DC: Centre for Strategic and International Studies), while Li Da-Jung stressed the Taiwan factor and defence budget increase in "Assessing China's White Paper on National Defense," *Centre for China Studies Bulletin*, National Chengchi University, (Taipei) January 2005 pp. 26-28 [accessed from http://ics.nccu.edu.tw]. A workshop report by the Centre for Naval Analysis is by Julia Rosenfield, "Assessing China's 2004 Defense White Paper: A Workshop Report," Centre for Naval Analysis, VA 5p, January 2005 (accessed from http://www.cna.org). In "China's Defence White Papers - A Different Perspective on the 'Peaceful Rise," *China Aktuel* February 2007, pp. 79-94, Saskia Hieber argued that China's official rhetoric about "peaceful rise" should be viewed with scepticism given China's active military preparation over Taiwan, bridging the military gap with the US, etc. I argued that the Chinese White Papers, although they contain valuable information on defence matters, could hardly be termed transparent. See "Transparency with Chinese Characteristics: China's White Paper on National Defence of 2004 " *Chinese Military Update of RUSI Journal,* vol. 2, no. 9, July 2005, pp. 5-10. This article is partly based on my article above.

Major policy perspectives of the Chinese government can be derived from its White Papers, including on its national defence and dynamics.

perspectives of the Chinese government can be derived from its White Papers, including on its national defence and dynamics. In general, defence White Papers are issued by a country to convey to the world and its own people its efforts in arriving at authentic information about its defence system, its transparent attitude towards issues previously kept secret and to maintain overall effective control of the defence sector by the civilian leadership. These papers have reflected on national strategy, defence policy, external security environment and the broad ways to cope with these challenges, disarmament, military equipment acquisitions, defence budgetary estimates, training of the personnel, civil-military relations, political work among the armed forces and the like. In some respects, these are valuable pieces of information for the outside world. Overall, these papers are relatively moderate in tone and helpful in understanding the changing defence policies in broad outlines. Nevertheless, a critical evaluation of all the six White Papers indicates a gradual change in the discourse in China today on defence issues. This is more explicit in the latest

While "uncertainties and destabilizing factors are on the increase," the Chinese military (People's Liberation Army – PLA) is being geared up to "prevent and defuse crises and deter conflicts and wars."

White Paper issued in December 2006.[2] Thus, the 2006 White Papers argued that while "uncertainties and destabilizing factors are on the increase," the Chinese military (People's Liberation Army – PLA) is being geared up to "prevent and defuse crises and deter conflicts and wars." This appears to be a key change in the previous war preparations that stressed "fighting" rather than "winning". This transition in the PLA's mission came up during the leadership under Jiang Zemin, while by Hu Jintao's time, the PLA appears to be more

2. References to all the White Papers issued by China on defence are accessed from http://www.china.gov.cn

confident in "deterring" wars from happening. These and other related aspects of the Chinese military are elaborated below through an examination of the White Papers.

CHANGING DISCOURSE ON STRATEGY

A textual analysis of the White Papers and other official documents and an evaluation of the context indicate that the discourse on defence related issues has undergone a major transformation in China. China's international strategy has also changed over a period of time as a reflection of perceived threats, intentions and capabilities. The guidelines formulated reflect a movement towards status quo. It is not out of context to cite the Chinese Foreign Ministry policy division's *Yearbooks* which, in the recent period, state that China stands for peace (*heping*) and stability (*wending*).[3] However, the previous political positions of China were different from the recent rhetoric. For instance, the pre-People's Republic of China (PRC) 1949 Common Programme – which can be considered to be a social contract between the Communist Party and the Chinese people – referred to China's *"stand for lasting* international peace and friendly cooperation among the people of the world, and opposition to the imperialist policies of aggression and war." In 1954, the PRC Constitution stipulated, "The steadfast policy of our country in international affairs is to work hard for the lofty goal of world peace and the progress of mankind." In this period, China was selective in the use of words such as war *(zhanzheng)* and peace *(heping),* and such words as "balance" *(pingheng)* of power were banished, at least in the official rhetoric.

The post-1978 reforms in the economic and military spheres have ushered in a different kind of discourse. Creation of economic wealth and burgeoning cities and increase in maritime trade as a percentage of the gross domestic product (GDP) has impacted on the official discourse of China. For instance, the 1982 constitutional guidelines mentioned that China "strives to safeguard world peace and promote the cause of human progress." The 1995 White Paper on arms control and disarmament stated that China would be a *"reliable*

---

3. See *Zhongguo Waijiao (China's Diplomacy)*, (various yearbooks), (Beijing: Ministry of Foreign Affairs).

force in the cause of safeguarding world peace" (emphasis added). The 1998 White Paper, while characterising China as a "responsible big country," mentioned its position as a "*firm force* safeguarding world peace and stability" (emphasis added). The 2002 Paper was more explicit in this regard. It stated that China "*endorses all activities* conducive to maintaining the global strategic balance and stability" (emphasis added). The 2006 Paper stated that China is "determined to remain a *staunch force* for global peace, security and stability" (emphasis added). In regard to arms control and disarmament, the 2002 Paper argued that "it is vitally important to maintain the global strategic balance and stability."[4]

Thus, while at one level China, through these papers, turns away from the leftist revolutionary rhetoric of the Constitution of the 1970s, at another level, they reflect, in the wake of the reform process launched in 1978, a new-found confidence in its ability to influence global events. To some extent, these trends mesh with the US government's reassessment in the late 1990s that it needs to engage China in the region. Nevertheless, following the Belgrade bombings in 1999 and the EP-3 surveillance plane incident in 2001, subsequent Chinese White Papers were critical of the "unilateral" policies of the US. Currently, China has adopted a diplomatic line of "treating neighbours with kindness and of treating neighbours as partners" which means developing closer contacts with neighbouring countries and following policies of "peace and development" even as it sets it sights on global strategic issues.

Outlining a world view, reflecting on the nature of potential challenges emanating from different quarters, expressing intentions or taking measures to cope with challenges, capabilities and subjective factors may go far in explaining the major aspects of a country's defence strategy. China characterises its defence policy as "defensive in nature" (2004 Paper) and that it follows a policy of "positive defence and adheres to the idea of people's war" (1995 Paper). The 2006 Paper argued that China's defence policy is "purely defensive in nature." Several concepts recur in the five defence White

---

4. The 2000 Paper, written after the Kosovo War in 1999, however, made it clear that the United Nations Charter, the Five Principles of Peaceful Coexistence and other principles were to be the basis for such missions.

Papers, including people's war, people's war under modern conditions, local wars under high technology conditions to the latest local war under "informationalized conditions," indicating that the defence strategy of the country is in a transitory phase, with external stimuli posing as major components of such strategy.

The defence strategy of the country is in a transitory phase, with external stimuli posing as major components of such strategy.

While stating that the Asia-Pacific region still "enjoys basic stability in its security situation," China argued in the 2004 Paper (as it had in the 2000 Paper) that

> ...complicated security factors in the Asia-Pacific region are on the increase. The United States is realigning and reinforcing its military presence in this region by buttressing military alliances and accelerating deployment of missile defense systems. Japan is stepping up its constitutional overhaul, adjusting its military and security policies and developing the missile defense system for future deployment. It has also markedly increased military activities abroad.[5]

Taiwan

Thus, Eastern Asia has been identified by China as posing considerable challenge to its security. More importantly, the 2004 Paper depicts the Taiwan Strait situation as "grim" and events under President Chen Shuibian (viz., referendum, proposed constitutional changes, and arms imports) as "the biggest immediate threat to China's sovereignty and territorial integrity as well as peace and stability on both sides of the Taiwan Straits and the Asia-Pacific region as a whole." These are configured as the first of the several challenges that the country faces. The principal threats facing Chinese security according to the 2004 Paper are four in number:

---

5. The 2000 Paper went further than this by alleging that certain big powers are pursuing "neo-interventionism, a "neo-gunboat policy" and neo-economic colonialism, which are seriously damaging peace and security." It was also critical of the "extra-regional countries" interfering in the South China Sea dispute. Nevertheless, the tone of the 2006 Paper, while mentioning about the challenges, was moderate, and stressed "Never before has China been so closely bound up with the rest of the world as it is today."

● The vicious rise of the Taiwan independence forces.[6]

● The technological gap resulting from the revolution in military affairs (RMA).

● The risks and challenges caused by the development of trends toward economic globalisation.

● The prolonged existence of unipolarity vis-à-vis multipolarity.

However, in terms of the broadening of security challenges in non-traditional aspects, the paper argued that "...world peace remains elusive. Geo-political, ethnic, religious and other conflicts interact with political and economic contradictions, resulting in frequent outbreaks of local wars and armed conflicts."[7] While the 1998 Paper mentioned the possible clash over "disputes and questions left over by history" (the characteristic Chinese euphemism for territorial disputes with Tsarist Russia, Japan, British India and their successors), by the end of the decade, these have not, by and large, crept into the subsequent papers as most of the land border disputes have been resolved with all neighbours, save for those with India and Bhutan.

The 2006 Paper identified Taiwan as posing serious challenges to its security. It elaborated thus:

The struggle to oppose and contain the separatist forces for "Taiwan independence" and their activities remains a hard one. By pursuing a radical policy for "Taiwan independence," the Taiwan authorities aim at creating "de jure Taiwan independence" through "constitutional reform," thus, still posing a grave threat to China's sovereignty

---

6. The 1998 Paper, coming as it did after the 1995-96 Taiwan Straits missile crisis, has been the most extreme, of all the papers, in its position on Taiwan. It argued: "In deciding which way to deal with the issue of Taiwan, the Chinese government has no obligation to make a commitment to any country or any person attempting to split China." While China perceives Taiwan as its internal matter, in a globalisation era in which China actively participates and is integrated, this position would be reckless in regard to international shipping, insurance rates, stock exchanges, environmental fallout and other factors. The 2000 Paper refers to possible "drastic measures" by the Chinese government on Taiwan if the latter were to "refuse, *sine die*, the peaceful settlement of cross-Straits reunification through negotiations." This provision may have been incorporated at the behest of the then Military Commission Chairman Jiang Zemin in whose regime several intimidating military exercises and postures were made. Another related issue on Taiwan is the Chinese refusal to continue participation in the UN Register of Conventional Arms after 1997 to protest against "a certain country ....[which] began to register its arms sales to Taiwan in the form of a footnote to its national report."

7. The 1998 Paper mentions about "armed conflicts and local wars touched off by disputes about territory, natural resources, ethnicity or religion."

and territorial integrity, as well as to peace and stability across the Taiwan Straits and in the Asia-Pacific region as a whole.

China's "red lines" prescribed for the Taiwan Straits scenario are no to Taiwanese independence, no "to foreign interference of any form, and to arms sales to Taiwan or entrance to military alliance of any form with Taiwan by any country in the world." These proscriptions are a departure from the original "three nos" and reflect the changed security situation and ground realities. However, it needs to be seen how China responds to the Taiwanese legislative body June 2007 Letter of Request to the Pentagon for acquiring several "big-ticket" weapon systems such as F-16 aircraft, P-3 Orion aircraft, Patriot missile systems and others.[8]

United States

Continuing its decades-long strategic focus on the US, China has expressed concerns on the role of the US. In the backdrop of the US actions in Iraq, the 2004 Paper stated, "Tendencies of hegemonism and unilateralism have gained new ground, as struggles for strategic points, strategic resources and strategic dominance crop up from time to time." This is not only reflective of the US neo-conservative agenda of restructuring the West Asian region, but also of the issue of energy security in West Asia, and Central Asia, and the strengthening of US-led military alliances in Asia, especially in East Asia, with the prospect of ballistic missile defence system deployment.

On the other hand, as a consequence of its own limited prowess in influencing "high-politics" at the United Nations and other avenues, China's stance on the US has undergone a change. The Chinese foreign minister, in a speech at a meeting of foreign ministers in December 2001 in Hanoi, reportedly stated that China "did not want to squeeze the USA out of Asia."[9] This has been a major change from the early 1990s position that all "outside forces" in Southeast Asia should withdraw from the region. More importantly, in October 2002, China

---

8. See John Tkacik, "Approve Taiwan's Arms Buy: Don't let China Dictate US Policy," *Defense News*, July 30, 2007, p. 37.
9. See John Hill, "China's PLA Reform Success," *Jane's Defence Weekly*, December 1, 2003.

reportedly requested the North Atlantic Treaty Organisation (NATO) to engage in a bilateral dialogue on the security situation in Central Asia, after Western forces gradually entered into military arrangements or established bases in the region that borders China. However, by 2005, partly due to the "coloured revolutions" in its western backyard, China supported the Shanghai Cooperation Organisation's (SCO's) resolution on scuttling the US' role in Central Asia. China, likewise, was reluctant to expand the multilateral groupings to include the US. The two East Asian Summits in 2005 and 2007, for instance, postponed the issue of expanding the grouping's membership.

> **China has become increasingly engaged in security dialogues and has been moving towards multilateralism in joint military cooperation.**

China is currently engaged in consultations with the US on non-proliferation, the counter-terrorism campaign and bilateral military cooperation. With other countries as well, China has become increasingly engaged in security dialogues and has been moving towards multilateralism in joint military cooperation, especially with Russia, the Central Asian Republics, France, the United Kingdom, Pakistan and India in the field of maritime search and rescue and the counter-terrorism campaigns. The PLA has also stepped up its United Nations peace-keeping efforts across the globe and has increased military exchanges with, and visits to, other countries.

Japan
Next to Taiwan, Japan is considered to pose major challenges to China. Indeed, the first country to have opposed the traditional Middle Kingdom was Japan, besides Vietnam. The Chinese hark back to these times when Japan posed a considerable security challenge to them. All the six White Papers have mentioned about Japan, although the 2006 Paper is more explicit. While ignoring the October 2004 incident involving a Han-class submarine in Japanese waters, for which China for the first time reportedly "apologised" to the Japanese government, the December 2004 White Paper viewed

developments in Japan that are leading to the latter's increased strategic role as a potential security challenge to China. The 2006 Paper stated, "Complex and sensitive historical and current issues in China's surrounding areas still affect its security environment." To elaborate, these are concerned with growing Japanese military capabilities, frequent visits of high political personalities to the Yasukuni Shrine, revisions of text books, etc. It

The December 2004 White Paper viewed developments in Japan that are leading to the latter's increased strategic role as a potential security challenge to China.

appeared that the China-Japan relations, despite last year's visit of the Japanese prime minister and his efforts at normalisation, are poised to be tense, if not in outright conflict. Given the concerted Chinese military modernisation, specifically in power projection capabilities like the medium to long range missiles and naval and air force platforms, Japan is wary of its interests vis-à-vis the Senkaku Islands, and the oil fields in the East China Sea, etc. In general, three broad scenarios were visualised by the Japanese Defence Agency in terms of Chinese attacks on Japan as follows:

- Firstly, in the event of a military conflict between China and Taiwan, China may attack parts of Japan to stop US forces based in the country from supporting Taiwan.
- Secondly, China may use military force to seize the disputed Senkaku Islands.
- Thirdly, China may move to secure its interests in a gas field in the East China Sea.

If the above were to be true, then the East Asian region is poised to remain a hotspot of the world for several years to come. Interestingly, the 2006 Paper has stated that small countries are poised to play a bigger role in the years to come. Perhaps, China was referring to the growing leverage of countries such as North Korea, Myanmar, Pakistan and others in Asia as having a significant impact on the evolving strategic environment. It needs to be seen whether China will continue to utilise these countries in its forward march.

For the PLA, the "first step is to lay a solid foundation by 2010, the second is to make major progress around 2020, and the third is to basically reach the strategic goal of building informationized armed forces and being capable of winning informationized wars by the mid-21st century."

PLA MODERNISATION

The security challenges of the country are to be countered by the PLA. Emphasis is being placed on the modernisation of hardware and software within the operations of the PLA. Although all the White Papers emphasised on military modernisation, the 2006 Paper is different from the previous ones in the sense that it laid down a clear roadmap of the modernisation drive. It stated that for the PLA, the "first step is to lay a solid foundation by 2010, the second is to make major progress around 2020, and the third is to basically reach the strategic goal of building informationized armed forces and being capable of winning informationized wars by the mid-21st century." Clearly, the PLA's sights are set forth on the long-term perspective, and clubbed with the fast rising economic growth of the country, we could expect a large portion of this growth to impact on the PLA modernisation, with a significant impact on the strategic situation in Asia and the globe at large. More importantly, the PLA modernisation has been acquiring *offensive* features in the last few years in defence strategic posture, planning, military training and exercises.

Taking a cue from the 16th Party Congress at the end of 2002, the PLA emphasised that mechanisation and informationisation were to be pursued for the next two decades. As the PLA's mechanised platforms are relatively less advanced compared to other armed forces in the region, a policy of the simultaneous development of both mechanisation and the introduction of information-based platforms has been undertaken, keeping in view the current level of PLA development, budgetary aspects, technological assimilation, etc.

China's efforts highlighted in the White Papers on PLA modernisation include demobilisation, RMA, "balanced development of combat force structure (to

strengthen its Navy, Air Force and 2nd Artillery),” implementing its “Strategic Project for Talented People,” training a “new type of high-caliber military personnel,” joint logistics, joint operational training and transforming the PLA into “smaller but better...integrated and efficient...appropriate in size, optimal in structure, streamlined in institutional set-up and flexible and swift in command.”

Of these, the demobilisation efforts are the most visible. The 2004 Paper, in describing China’s troop demobilisation efforts, is brief and to the point, unlike the descriptions in previous papers. For instance, in the 1995 White Paper, China declared that it has “unilaterally adopted a series of measures aimed at disarmament. These include greatly reducing military staff, reducing defence spending, strictly controlling transfers of sensitive materials, technology and military equipment and converting defence technologies industry to civilian production.” It termed these as “positive, sincere and *responsible*” (emphasis added). The 1998 Paper, likewise, argued that its demobilisation effort was an “important strategic decision of unilateral disarmament [which]...expressed China’s genuine wish for peace.” The dire necessity of reducing its mammoth standing army, which proved to be ineffective in the Vietnam War of 1979, was advocated here as a virtue of disarmament. To place this issue in a broader context, as early as 1975, Deng Xiaoping debunked the PLA as bloated, lax, conceited, extravagant, inert and not “combat-worthy.”[10] Subsequently, three major demobilisation campaigns were launched by the PLA leadership, in 1985, 1997 and in 2003, with promises declared of demobilising one million, 500,000 and 200,000 soldiers and officers, respectively.

DEFENCE BUDGET

One of the most crucial aspects of transparency in military systems is a nation’s defence allocations. Indeed, in most of the White Papers issued by China, this has been a constant item, although it appeared to be underestimated. Basic guiding principles in this aspect include the need for the proper combination of self-reliance (which means emphasising indigenous research and development) and

---

10. See Deng Xiaoping, *Selected Works of Deng Xiaoping* (1975-82) (Beijing: Foreign Languages Press, 1984) pp. 91 and 11.

the import of military equipment and systems, achieving "cost-effectiveness in military expenditures so as to modernize the armed forces with less input and better results," and "coordinated development of national defence and economy" rather than being "subordinated" to the latter.[11]

China has claimed either that it has reduced defence spending, or has increased it only "moderately" to bear the increasing costs of the maintenance of troops or that such spending is "fairly low level" vis-à-vis the defence spending of the advanced countries (the US, UK, France, Japan, etc.). The 2002 Paper affirms that China has increased its defence spending, but only "somewhat." All of these arguments are misleading and inconsistent. In the initial period, China argued that the increase in its defence budget was nullified by the increasing inflationary trends of the early 1990s. However, the defence budget increased in real and absolute terms over the 1990s, specifically in the latter part of the decade when inflationary trends were being successfully controlled by the government. The last five years have also witnessed double-digit increases in budgetary allocations to the official figure of about $30 billion in 2005, $35 billion in 2006 and $44 billion in 2007. Other estimates range from $70 to $100 billion, making it the second largest military budget in the world after that of the US.

> **The defence budget increased in real and absolute terms over the 1990s, specifically in the latter part of the decade when inflationary trends were being successfully controlled by the government.**

China has argued that the increase in its defence budget is due to increases in salaries and allowances, the improvement of the social insurance system of the PLA, expenditures stemming from the resettlement of demobilised personnel, an increase in investments in the recruitment of "high-caliber talent" and the purchase of modern equipment. To some extent, these explanations are valid.

---

11. Further increases in defence allocations are not ruled out by China. The 1995 Paper, for instance, stated, "As long as there is no *serious threat* to the nation's sovereignty or security, China will not increase its defence spending substantially or by a large margin" (emphasis added). Despite terming peace, development and cooperation as "an irresistible trend of history," China has, nevertheless, increased its defence budget in recent years.

However, trimming expenditures, cutting down on the size of the armed forces, diversifying sources of income through defence conversion, commercial activities and export of arms and earning of hard currency have generated additional funding for the PLA. The "unaccounted" for budgetary allocations may include procurements from abroad, projects of military significance but itemised under civilian headings, subsidies, etc.

ARMS CONTROL AND DISARMAMENT

China's stance on the nuclear and ballistic missile programme and proliferation has become more controversial than any other topic given the strategic nature of the subject and its significance to international security. This is partly due to China's ambiguous position on the subject despite its claims to be consistent and principled. China has stated in the six White Papers and in other documents, that it:

- will not be the first to use nuclear weapons, nor to use nuclear weapons on non-nuclear states and nuclear weapon free zones;

- is for complete prohibition and total destruction of nuclear and chemical weapons, does not support, encourage, assist or engage in proliferation of nuclear weapons;

- supports the three main goals of the nuclear Non-Proliferation Treaty, viz., preventing the spread of nuclear weapons, accelerating nuclear disarmament, and promoting international cooperation in the peaceful utilisation of nuclear energy;

- follows three principles regarding nuclear exports: exports serving peaceful use only; acceptance of the International Atomic Energy Agency's (IAEA's) safeguards; and no transfers to a third country without China's consent. In addition, China has declared that it

- is opposed to the double standard whereby anti-nuclear proliferation is used as a pretext to limit or retard the peaceful use of nuclear energy by the developing nations;

- respects the right of every country to self-defence aimed at safeguarding its own security in accordance with the relevant principles contained in the Charter of the United Nations, but, at the same time, it is very concerned

about the adverse effects on world security and regional stability arising from excessive accumulations of weaponry;.

● opposes any arms race in outer space.

The dynamics of China's role in this aspect appears to be mixed, with more evidence pointing towards deliberate proliferation in countries perceived to be adversaries of China. While China is not alone in proliferation of weapons of mass destruction, despite officially acceding to some of the international treaties, discriminate proliferation based on political and strategic considerations has been made. These range from the aborted attempt to transfer nuclear technologies to Indonesia in 1965, well-documented and reportedly continuing transfers of not only nuclear but also ballistic weapons to Pakistan from 1972, and suspected transfers to other states in West Asia, especially to Iran and Saudi Arabia. The ambiguity, nay contempt, of China's position towards arms control and disarmament can also be seen in its threat to proliferate more such weapons if the US deploys ballistic missile defence systems in East Asia.

CONCLUSIONS

Since its establishment 80 years ago in 1927, the PLA had undergone several transformations, from being a Red Army of the Workers and Peasants (its original name) to seizing state power in 1949 and installing a Communist government. Subsequently, it had helped the Communist Party to consolidate power further by military actions in Tibet, south and southwest China in the early 1950s. It waged wars against the US-led UN forces in Korea in 1951-53, India in 1962, the Soviet Union in 1969, Vietnam in 1979 and countless skirmishes against Taiwan in the 1950s and in 1995-96. During the Cultural Revolution, it helped the left and restored order across the country, and in the 1980s and 1990s, its policy was reformulated to support the spread of the market economy. Throughout its history, its principles and policies, ethos and methods, composition and outlook have all undergone radical changes and at 80 years, it wishes to transform itself into a potential force to reckon with on the international stage. With the gradual transformation of the country from a

self-sufficient economy to a manufacturing hub of the world and gradually getting integrated in the globalised world, the Chinese military has to consider new dynamics. That is, while it has to keep pace with the RMA trends of the world, it has to, given the negative fallout of the 1995-96 Taiwan Straits missile crisis and concerns on its rise, consider non-war solutions without compromising on its primary agenda (viz., protection of sovereignty and territorial integrity). Primarily then, besides preparing to successfully execute a war, the PLA is also concerned with deterring local wars from happening. In such an assessment, entering into local wars could jeopardise the cumulative gains that China posted from 1978, besides departing from the central 16th Party Congress resolution in 2002 of building a "well-off society." The PLA then has to consider both these crucial aspects – protecting core sovereignty claims, while, at the same time, serving the Party's injunctions on "economics at the centre." This tight-rope walking led to the recent emphasis on conventional and strategic deterrence.

With more than $ one trillion as foreign exchange reserves, China has the capability to buy not only sophisticated defence equipment but also influence in several countries through a well-designed strategy of political, diplomatic and economic incentives. On the Taiwan issue, while conducting several military exercises off Dongshan Islands and others to intimidate Taiwan, China has also initiated other military political-diplomatic efforts. It has introduced "three wars", viz., the media war, legal war and psychological war. The anti-secession law of 2005 is to bind several countries in a politico-legal framework to curtail the diplomatic space of Taiwan. Through the exclusive multilateral groupings such as the SCO, East Asian Summit and others, China could reduce space for other countries.

The cross-straits profile of military strength now weighs overwhelmingly in

> **China has the capability to buy not only sophisticated defence equipment but also influence in several countries through a well-designed strategy of political, diplomatic and economic incentives.**

favour of China in quantitative and qualitative indicators. While the transition took place in 1999, the recent period with its military preparation of "three strikes and three defences" and deployment of nearly 800 medium-range ballistic missiles (MRBMs), advanced Su-27s and Su-30s and stealth vessels ensured the relative dominance of China in the region. Further, the October 2004 Han-class SSN incident near Okinawa and repeated "research" visits by the Chinese naval vessels near Japan indicate that Chinese plans are actually farther away – into the Pacific Ocean. Likewise, the recent "string of pearls" strategy in the Indian Ocean further indicates the ambitions of China.

All the White Papers issued by China on defence were relatively silent on India. No major policy pronouncements or responses were made by China vis-à-vis India. Nevertheless, the 2006 Paper mentions India in terms of the

The Chinese military writings, unlike the civilian or commercial sectors, continue to raise a voice against India.

improvement in the India-Pakistan relations, border trade opening through Nathu La, military exchanges or through China's tsunami relief efforts. While the "3 pillars" of the 16th Party Congress in November 2002 (viz. China's responses towards major powers, neighbours and developing countries) and President Hu Jintao reportedly elevated India in the strategic calculus of China, as a predominantly military/strategic viewpoint, the White Papers on defence had no major position on India. This once again provides credence to the predominant assessment that the PLA constituents still have a considerable hold over China's national policy towards India. Although the Chinese commercial lobby has been visible in its India policy (with about $25 billion bilateral trade), the PLA appeared to have had a greater say on the western regions of the country. The Chinese military writings, unlike the civilian or commercial sectors, continue to raise a voice against India.[12]

---

12. See Srikanth Kondapalli, "Chinese Military Eyes Southern Asia" in Andrew Scobell and Larry Wortzel, eds., *The PLA Shapes the Future Security Environment* (Carlisle Barracks, PA: US Army War College & The Heritage Foundation, October 2006) pp.197-282 at http://www.strategicstudiesinstitute.army.mil/pdffiles/PUB709.pdf

PAKISTAN'S NUCLEAR DOCTRINE AND STRATEGY

MANPREET SETHI

INTRODUCTION

Ever since its independence, Pakistan has been central to India's national security consciousness. This assumed a more complex dimension with the introduction of nuclear weapons in the two nations. Even though the overt demonstration of Pakistan's nuclear weapon capability happened only on May 28 and 30, 1998, after India had revealed its nuclear hand, it is widely believed that Pakistan had acquired the necessary wherewithal in 1984 when A. Q. Khan claimed that Khan Research Laboratories (KRL)[1] was "in a position to detonate... a nuclear device on a week's notice."[2] By 1986, the US National Intelligence Estimate had concluded that Pakistan was only "two screwdriver turns" away from a nuclear weapon[3], and the same was proudly acknowledged by Pakistan in 1987.[4]

Its nuclear capable status, even when not demonstrated through nuclear tests, gave Pakistan the confidence to follow a stratagem espoused by former Chief of Army Staff, Gen. Aslam Beg, designed to contain a conventionally superior Indian military through an offensive policy of engaging it in a proxy war with

---

Dr. Manpreet Sethi is a Senior Fellow at the Centre for Air Power Studies, New Delhi.

1. Inaugurated in July 1976, it was then known as Engineering Research Laboratories (ERL) until May 1981 when President Zia-ul-Haq changed the name to Khan Research Laboratories in honour of A.Q. Khan's service to Pakistan's nuclear programme.
2. IISS Strategic Dossier, *Nuclear Black Markets: Pakistan, A.Q. Khan and the Rise of Proliferation Networks - A Net Assessment* (London: International Institute for Strategic Studies, May 2, 2007), p. 22
3. Ibid., p. 22.
4. Gen. Aslam Beg, "Pakistan Nuclear Propriety," *National Security*, (FRIENDS, 2000) as cited in Paolo Cotta-Ramusino and Maurizio Martellini, *Nuclear Safety, Nuclear Stability and Nuclear Strategy in Pakistan,* Landau Network - Centro Volta report, January 21, 2002. Gen. Beg, vice chief of the army in 1987 and chief from 1988-91, claims that Pakistan had six nuclear devices by 1989 and 15 delivery systems by 1991.

the help of groups. Over the last two decades, India has been trying to find the means of effectively dealing with asymmetric warfare, cheekily indulged in by Islamabad from the shadows of its nuclear weapons.

To enable India to address this reality, it is important to delve into Pakistan's perception of its nuclear capability. This, of course, is closely linked to how the Pakistani military and political decision-makers (mostly the same) identify their country's security vulnerabilities, its major threat perceptions, and seek to redress them, including through the muscle flexing allowed by their possession of nuclear weapons. Pakistan holds its nuclear weapons as the *ultimate guarantor of national survival* and uses them intelligently to nullify India's conventional superiority. How does it do this? To what extent are nuclear weapons conceived as an extension of the country's conventional capability? What is Pakistan's threshold for the use of nuclear weapons – early in operations, following an escalatory spiral, or not at all? How does this posture reflect in its nuclear force structure and deployment strategy? What are the discerning features of its nuclear doctrine? These are some of the questions that this paper considers in order to provide cues and directions to Indian policy-makers.

PAKISTAN'S EXPECTATIONS FROM ITS NUCLEAR WEAPONS

Pakistan considers the nuclear weapon as its most precious strategic asset. The country's leadership is extremely conscious of its value as the ultimate guarantor of the nation's existence as a sovereign entity. This was avidly brought out in one of the writings of Gen. Mirza Aslam Beg. In an article appropriately titled ''Pakistan's Nuclear Imperatives,'' he wrote, "Some safety against extinction is the inalienable right of an individual or a nation. Oxygen is basic to life, and one does not debate its desirability, *nuclear deterrence has assumed that life-saving property for Pakistan."[5]*

India is the *raison d'etre* of Pakistan's nuclear weapons. Its nuclear doctrine and strategy is *wholly and solely India-centric*, designed to address perceived

---

5. Gen. Mirza Aslam Beg, "Pakistan's Nuclear Imperatives," *National Development and Security*, vol.3, no.10, November 1994, pp. 29-41.

conventional and nuclear threats from India. Consequently, the nature and function of the Pakistani nuclear deterrent (including delivery mechanisms), as also its rules of employment and deployment, are all tailored to meet this one requirement. And, from this one *brahmastra* in its repertoire of military capabilities, Pakistan and particularly its army, given the nature of the system of governance in the country, expect to reap a rich harvest of military and political objectives.[6]

Pakistan's nuclear doctrine and strategy is *wholly and solely India-centric*, designed to address perceived conventional and nuclear threats from India.

MILITARY OBJECTIVES OF PAKISTAN'S NUCLEAR WEAPONS

Strategic Equaliser of Power Asymmetry

Pakistan has always resented its inherited geo-physical and structural asymmetry. A former Pakistani Foreign Minister, Abdul Sattar, lamented that the transition to independence "created seemingly impossible problems for Pakistan, which unlike India, inherited neither a capital nor government nor the financial resources to establish and equip the administrative, economic and military institutions of the new state...."[7] This perception that "Pakistan started its independent career as a weak nation,"[8] for which India was held blameworthy, were met by defining "national identity through religious symbolism and by building India-Pakistan rivalry."[9] Ever since, Pakistan has looked for ways and means to somehow equalise the power asymmetry with India through alliance building with the USA,

---

6. Peter Lavoy in his essay on Pakistan's nuclear doctrine has listed eight separate "uses" for Pakistan's nuclear weapons, four being specific to India, viz (i) last resort weapons to prevent military defeat or loss of territory; (ii) deterrent to conventional military attack; (iii) facilitators of low-intensity conflict; and (iv) tools to internationalise the Kashmir issue. See Rafiq Dossani, Henry S. Rowen, *Prospects for Peace in South Asia* (Stanford: Stanford University Press, 2005).

7. Abdul Sattar, "Fifty Years of the Kashmir Dispute: The Diplomatic Aspect," in Suroosh Irfani, ed., *Fifty Years of the Kashmir Dispute* (Muzaffarabad: University of Azad J & K, 1997).

8. Pervaiz Iqbal Cheema, *The Armed Forces of Pakistan* (Karachi: Oxford University Press, 2003), p. 34

9. Husain Haqqani, *Pakistan: Between Mosque and Military* (Lahore: Vanguard Books, 2005), p. 12. The author argues that focus on rivalry with India became an instrument for securing legitimacy by the national security apparatus in Pakistan. This continues to be the case.

China and other Muslim countries, as well as through acquisition of modern conventional weaponry to match a far larger and better equipped Indian Army. However, it was in the acquisition of a nuclear weapons capability that Pakistan discovered the best and most effective equaliser.

Islamabad had begun to consider acquisition of nuclear weapons from the time China tested its own nuclear device in 1964 because it assumed that this development would set India down the nuclear path. Zulfikar Ali Bhutto,

> **Islamabad had begun to consider acquisition of nuclear weapons from the time China tested its own nuclear device in 1964.**

Pakistan's foreign minister in the government of Gen. Ayub Khan, emphasised the deterrence value of nuclear weapons in 1965 and pressed upon his president that, "All wars of our age have become total wars... and our plan should, therefore, include the nuclear deterrent."[10] However, it was only in January 1972, within three weeks of its defeat in the 1971 War, that serious thought was given to the nuclear weapon as an effective instrument to match up to a larger power.[11] Pakistan was not unique in reaching this conclusion. Even the British Prime Minister, Margaret Thatcher had said in Moscow on March 31, 1987, "Nuclear deterrence is the only means allowing small countries... to stand up to big countries."[12] Likewise, in its search for viable security, Pakistan has found in nuclear weapons a means to balance India's conventional superiority.

At the same time, the nuclear weapons programme has provided Islamabad the additional benefit of addressing India's perceived advantage in science and technology. In this context, it merits remembering that Z.A. Bhutto, while he himself was out of office in 1969, had cautioned the then Pakistani government, "If Pakistan restricts or suspends her nuclear programme, it would not only enable India to blackmail Pakistan with her nuclear advantage, but would *impose a crippling limitation on the development of Pakistan's science and technology.*"[13] He

---

10. Z.A. Bhutto, *The Myth of Independence* (Karachi: Oxford University Press, 1969), p. 153.
11. Jasjit Singh has identified two crucial strands of Pakistani nuclear strategy that evolved after 1971: (a) nuclear weapons to neutralise India's conventional and military superiority; (b) use of irregular forces and terrorism. Jasjit Singh, "Pakistan's Nuclear Strategy: An Assessment," *Aakrosh*, vol 4, no.13, October 2001, p. 73.
12. Gerard J. Degroot, *The Bomb: A History of Hell on Earth* (London: Pimlico, 2004), p. 188.
13. Bhutto, n.10. Emphasis added.

was clear that Pakistan's development of nuclear weapons would serve to effectively and more holistically counter-balance India's preeminence in the subcontinent, and demonstrate national technological capabilities.

   In yet another use of its nuclear weapon for bridging the gap with India, Pakistan has intelligently manipulated the US for conventional arms and economic assistance. For instance, after India's peaceful nuclear explosion in 1974, Bhutto warned the US that if his country was unable to get "sufficient conventional weapons" to bridge the disparity, Pakistan "would forego spending on conventional weapons and make a big jump forward for concentrating all its energy on acquiring the nuclear capability."[14] Pakistani leaders have always tried to make a convincing case to justify nuclear weapons as the only means available to "preserve a broad strategic equilibrium with India, to neutralize Indian nuclear threats or blackmail, and to counter India's large conventional forces."[15] And the US was easily convinced since it anyway perceived India as part of the Sovied constellation in the Cold War, while Pakistan was their ally against the Communist bloc.

Deterrent Against Conventional War

Common sense mandates that nuclear deterrence premised on mutual assured destruction should place an automatic limitation on violence and act as a brake on total war. Given its horrendous consequences, no rational leader could risk war if nuclear retaliation was even remotely possible. This reality has been intelligently exploited by Pakistan in its national security strategy. Islamabad believes that notwithstanding its conventional inferiority, the nuclear weapon provides it

Islamabad believes that notwithstanding its conventional inferiority, the nuclear weapon provides it an "infrangible (sic) guarantee of its independence and physical integrity."

14. P.B. Sinha and R.R. Subramanian, *Nuclear Pakistan: Atomic Threat to South Asia* (New Delhi: Vision Books Pvt Ltd., 1980), p.70

15. Zafar Iqbal Cheema, "Pakistan's Nuclear Use Doctrine and Command and Control," in Peter Lavoy, Scott D Sagan and Jim Wirtz, eds., *Planning the Unthinkable: How the New Powers Will Use Nuclear, Biological and Chemical Weapons* (Ithaca: Cornell University Press, 2000), p. 169.

an "infrangible *(sic)* guarantee of its independence and physical integrity"[16] even in its pursuit of revisionist policies. Keen to avoid a full-scale conventional conflict with India, but desirous of altering the status of Kashmir, Pakistan reckons this possible through nuclear weapons. Without them in its quiver, it is certain that Pakistan's proxy war would have breached the limits of India's tolerance and led to a conventional offensive. This eventuality, Pakistan perceives, stands blocked with its nuclear weapons. As explained by Benazir Bhutto in an interview in 2004, nuclear weapons ensured that "India could not launch a conventional war, knowing that if it did, it would turn nuclear, and that hundreds of millions would die... suicide not just for one, but for both nations."[17]

Evidently then, Pakistani leaders, even civilian, have believed that the danger of nuclear escalation insulates Pakistan from Indian conventional attack, allowing Pakistan to not only ensure its own security, but also pursue a provocative strategy in Kashmir. Pakistan's willingness to launch the Kargil conflict was based on the hypothesis that "their new overt nuclear status would enable them to deter the Indians even more effectively than their *de facto* nuclear capacity had previously done."[18] Two other assumptions underlay the adventure: profound confidence in the belief that the political establishment in India, especially the caretaker government then in power, would not be able to take a hard decision of escalation; and, a reasonable confidence that the presence of nuclear weapons would attract the immediate attention of third parties (most notably, the USA) anxious to defuse a potential nuclear confrontation in South Asia. These conditions were expected to force India to accept a stalemate even at the cost of losing a small slice of its territory. However, that all the three assumptions proved untrue is another story. Yet, for the Pakistani security establishment, nuclear weapons continue to provide a shield to deter conventional aggression, even as it pursues covert aggression through sub-conventional means.

16. Ian Smart, "The Great Engines: The Rise and Decline of a Nuclear Age," *International Affairs*, vol.51, 1975, p. 548, as cited by Rifaat Hussain "Nuclear Doctrines in South Asia," SASSU Research Report, no.4, December 2005.
17. S. Paul Kapur, "India and Pakistan's Unstable Peace: Why Nuclear South Asia is not like Cold War Europe," *International Security*, vol.30, no.2, Fall 2005, pp. 127-152.
18. Kapur, Ibid., p. 144.

Facilitators of Asymmetric Warfare

In most countries possessing nuclear weapons, these are mainly considered instruments of nuclear deterrence, meant to obviate a *nuclear* attack by the enemy. But for Pakistan, its nuclear weapons serve to not only deter a *nuclear* and a *conventional* attack, but also provide it with the immunity to indulge in aggressive military strategies that harbour political ambitions. Accordingly, the Pakistani nuclear doctrine encapsulates a more offensive form of deterrence that seeks to change the *status quo* by holding out the threat of nuclear blackmail on Kashmir while deterring an Indian conventional attack.

> **For Pakistan, its nuclear weapons serve to not only deter a *nuclear* and a *conventional* attack, but also provide it with the immunity to indulge in aggressive military strategies.**

This linkage was evident once there was a significant spurt in insurgency and terrorism in Jammu and Kashmir (J & K) from 1989 onwards, soon after the acquisition of nuclear weapons capability by Pakistan. The trend continued through the 1990s and was interspersed by statements by A.Q. Khan in 1992, and other political and military leaders in 1995-96 threatening India from taking decisive military action against Pakistan.[19] The idea was to allow Islamabad the freedom to manage escalation at a desirable level. According to one analyst, "Islamabad is convinced that the mere threat of approaching the nuclear threshold will prevent India from seizing the strategic initiative and military dominance of events, permitting Pakistan to escalate the crisis at will without the fear of meaningful Indian retribution."[20] Even amidst fighting in Kargil, the Pakistan Army leaders insisted "there is no chance of the Kargil conflict leading to a full-fledged war

> **Islamabad is convinced that the mere threat of approaching the nuclear threshold will prevent India from seizing the strategic initiative and military dominance of events.**

---

19. For more on these linkages, see J.N. Dixit, *India-Pakistan in War and Peace* (New Delhi: Books Today, 2002).
20. Yossef Bodansky, "Pakistan's Nuclear Brinkmanship," Freeman Centre for Strategic Studies, Israel. Available at http://www.freeman.org

between the two sides."[21] Interestingly, this was similar to the advice given by senior US military officers to President Kennedy during the Cuban crisis in 1962. They believed that the US could afford to launch a limited attack on Cuba because the USSR *would not dare* counter-attack in Berlin. Pakistani military counsel to the civilian government too dismissed the chance of a total war because nuclear deterrence afforded it greater impunity and immunity.

This is also the message Pakistan imbibed from India's decision not to launch an invasion in response to a provocative terrorist attack on the Indian Parliament in 2002 and the Kaluchak massacre at the height of troop mobilisation during Operation Parakram. Buoyed by the perception that nuclear deterrence worked in their favour, the larger Pakistani strategy appears to be to continue to bleed India while not provoking it enough to escalate to a point where any kind of decisive Indian action wrests the control of escalation from Pakistan.

India, meanwhile, has refuted this presumption by repeatedly alluding to the space for limited conventional conflict below the nuclear threshold. In fact, in the context of the US-USSR nuclear equation, Glenn Snyder had extrapolated in 1961, "The Soviets probably feel... that there is a range of minor ventures which they can undertake with impunity, despite the objective existence of some probability of retaliation."[22] India believes the same. The danger, however, remains that neither side is, or can be, absolutely clear about where the threshold lies. And, this, or the fear that conflicts can take on a dynamics of their own which makes escalation difficult to predict or control, imposes limitations on the initiator of violence. Therefore, even as Pakistan continues to use its nuclear weapons as effective facilitators of sub-conventional war to complicate India's security challenges, it cannot, at the same time, be free of the fear of an unintended escalation.

Nuclear Deterrence

Amongst their most prosaic military functions, nuclear weapons in Pakistan perform the traditional task of deterring the adversary's use of nuclear weapons.

---

21. Ihtasham ul Haque, "Peace Linked to Kashmir Solution," *Dawn Weekly Wire Service*, June 26, 1999. As cited in Peter Lavoy *et al*, eds., n.15, pp. 248-249.
22. Glenn Snyder, *Deterrence and Defense* (Princeton, NJ: Princeton University Press, 1961), p. 226.

Mutual assured destruction (MAD) is expected to uphold deterrence as long as both sides have a retaliatory capability and neither has a first strike capability. So it is that Pakistan, in order to enhance the credibility of its deterrence, has been working towards acquiring a second strike capability against India. Its concept of nuclear deterrence, however, is built on projecting the nuclear weapon as a militarily usable one. By indicating its willingness to use the weapon for its survival, it hopes to enforce deterrence against India's nuclear and conventional forces.

POLITICAL OBJECTIVES OF PAKISTAN'S NUCLEAR WEAPONS

Security Guarantor in Absence of Alliance Support for Military Adventurism
Islamabad embarked upon alliance building within the first decade of its independent existence to buttress its security — a Mutual Defence Alliance with the USA in 1953, further reinforced through an executive arrangement in 1959. This was seriously pushed for conversion, in the late 1970s, into a formal security treaty that would strengthen US security guarantees.[23] Though this was not formalised, President Nixon had already declared in September 1973, that the "independence and integrity of Pakistan is a cornerstone of American foreign policy." The US became its major power patron, showering weapons and economic aid on Islamabad. Meanwhile, after eleven long years of negotiations, Pakistan finally established a close relationship with China through a bilateral agreement in June 1976. The historic import of this was described by Bhutto himself as "my greatest achievement and contribution to the survival of our people and our nation."[24]

While these relationships translated into a rich haul of military hardware and other assistance (including nuclear materials such as ring magnets, special furnaces, heavy water, tritium and even weapon designs from China), Pakistan never found them very forthcoming with support for its territorial skirmishes with India. The US disappointed Islamabad in 1965 and 1971, and it was equally

---

23. For more on this, see Savita Datt, *To Chagai and Beyond: Nuclear Developments in Pakistan* (New Delhi: IK International Pvt Ltd, 2003), pp. 42-44.
24. Zulfikar Ali Bhutto, *If I am Assassinated*...(New Delhi: Vikas, 1979), p. 138.

miffed with China's advice to withdraw its forces from Indian territory in 1965. In 1999, too, both were loath to providing material or moral support to Islamabad for its adventure in Kargil. Therefore, over a period of time, and after every war with India, Pakistan has reluctantly accepted that neither the USA nor China would opt to become embroiled militarily in Indo-Pak Wars, and, in fact, would not hesitate to impose sanctions and embargoes on it. This made Islamabad realise its own vulnerability to political manoeuvring as a result of its dependence on external sources of weaponry. These realisations have added to the Pakistani perception that only its own nuclear weapons capability could guarantee its security and survival.

This consideration weighed heavily upon the Pakistani Administration in 1998 when after the Indian nuclear tests, Washington strongly advised Islamabad to refrain from a similar exercise and even promised substantial economic and military assistance, including the lifting of the Pressler Amendment[25], delivery of the stalled 60 F-16s, and other new weaponry. However, what was not forthcoming was the assurance of continuous military support against India. And, as far as Pakistan was concerned, that was reason enough to overtly demonstrate its nuclear capability. Two other assumptions helped it to make the decision: one, assurance provided by China to help Pakistan in the face of sanctions that were sure to follow its nuclear tests[26]; and second, the confidence that by showcasing the region as a dangerous nuclear flashpoint, it would anyway be able to extract concessions from the US. Kargil, it was hoped, would bring international attention to the region. However, Pakistan may not have bargained for the negative vibes that it received from its allies. In any case, the Kargil experience too reinforced Pakistani faith in its nuclear deterrent as the most reliable tool for its national security when its alliances let it down. Meanwhile, as India transforms its relations with the US and China, Pakistan's fear psychosis and its reliance on nuclear weapons could only grow.[27]

---

25. The US Congress passed this legislation in 1985 requiring the US president to certify that Pakistan did not possess a nuclear weapon as a precondition for American economic and military assistance.
26. Pakistani officials did travel to China in the period after India's and before its own nuclear tests.
27. Interestingly, some Pakistani analysts have even attributed the Pakistani desire for nuclear weapons to Sino-Indian rapprochement since that would erode Pakistan's margin for diplomatic manoeuvring!

Tool for Nation-Building and Prestige

Apart from security, Bhutto's push for nuclear weapons was also motivated by a desire to "divert the nation's attention from the humiliation it had suffered as a result of its defeat in the East..."[28] and his yearning for Pakistan "to walk tall."[29] Even President Musharraf has referred to Pakistan's nuclear achievements in the same vein. In a speech delivered on March 27, 2001, on the occasion of the retirement of A.Q. Khan, he said, "In a general sea of disappointment, the development of Pakistan's nuclear capability is a unique national success story."[30] And the nation and its people second this. The country's nuclear achievements are an effective rallying point for national pride. Not surprisingly, therefore, Kahuta, that houses the uranium enrichment plant, has been described as the "symbol of our national defiance" and the mastery of the enrichment technology as the "symbol of national pride, scientific and technical modernity and independence from foreign powers."[31] This has been explained thus by Brahma Chellaney[32]:

> The rapid technological advances by Pakistan in recent years are a symbol of nationalistic pride in a country which has overcome major political, technical, and industrial challenges to mount a program with a team of dedicated scientists. Pakistan is showing the world—as China did in the sixties—how a country with limited technical resources and a narrow industrial base can acquire nuclear weapons and ballistic missile capabilities by riding a wave of nationalism.

Instrument to Legitimise Military Power

Ironically enough, Zulfikar Ali Bhutto originally intended Pakistan's nuclear programme to serve as a civilian counterweight to the military. The programme was launched in the mid-1970s by his civilian government and the military evinced little interest in the same. In fact, Gen. Ayub Khan as president had dismissed Bhutto's calls for attention to nuclear weapons when he was his

---

28. Datt, n.23.
29. Steve Weissman and Herbert Krosney, *The Islamic Bomb* (New York: Times Books, 1981), pp. 17-18.
30. Gordon Corera, *Shopping for Bombs: Nuclear Proliferation, Global Insecurity and the Rise and Fall of the A.Q. Khan Network* (New Delhi: Foundation Books, 2006), p. 150.
31. IISS Strategic Dossier, n.2, p. 20.
32 Brahma Chellaney, "South Asia's Passage to Nuclear Power," *International Security,* vol. 16, issue 1, 1991, p. 43.

foreign minister from 1963-66. But, it was during Zia-ul-Haq's tenure as president that the programme came under military control and directorship. And there it has remained ever since. In fact, the Pakistan Army, keeping even the air force and navy out,[33] has effectively honed it as a "trump card" [34] against the civilian politicians and not allowed their influence in nuclear decision-making. Benazir Bhutto has openly admitted her limited participation in the country's nuclear decisions, including that she was allowed to be the prime minister under the tacit agreement that she would not interfere with the military's control of the nuclear programme. Meanwhile, by retaining the domestic focus on rivalry with India, the army has conditioned the Pakistani public to believe that there is a constant threat from India, which can only be effectively addressed by allowing the military a free hand with the country's economy, polity and nuclear policy.

Tool for Gaining Leadership of the Islamic World

Besides using it as a rallying point for national pride, Pakistan has also used the concept of "Islamic Bomb" to acquire support from, and leadership of, the Islamic countries. By portraying its nuclear weapons capability as belonging to the larger Muslim community, especially in the earlier decades of its nuclear programme, Pakistan was able to garner material and moral support from other Muslim countries such as Saudi Arabia, Libya and Iran. President Zia said in 1978 that Pakistan's possession of the nuclear weapon "would reinforce the power of the Muslim world."[35] Twenty years later, after the nuclear tests in Chagai, Prime Minister (PM) Sharif said, "Not only the whole nation, but the *whole Islamic ummah* hailed Pakistan for its great achievement and expressed happiness over the decision."[36]

However, this tendency to project a wider belongingness of the Pakistani nuclear weapon has considerably reduced post 9/11 and after the revelations of

---

33. The army has monopolised the post of chairman Joint Chief of Staff since the 1998 nuclear tests, abandoning the tradition of all three Services holding the position by rotation.
34. Ashley Tellis, *India's Emerging Nuclear Posture: Between Recessed Deterrence and Ready Arsenal* (Santa Monica: RAND, 2001).
35. Smruti Pattanaik, "Pakistan's Nuclear Strategy," *Strategic Analysis*, vol 27, no.1, January -March 2003.
36. *Summary of World Broadcasts*, Part 3 (Asia Pacific), FE/3241, June 1, 1998, p. A 1. Emphasis added.

the A.Q. Khan network. Islamabad is now more conscious of signalling a firmer and more responsible attitude towards its weapons of mass destruction (WMD) assets. This is not to suggest that earlier Islamabad had allowed other nations any physical access to its nuclear arsenal, but it did encourage a notional sense of wider Islamic pride in its nuclear venture, which in some cases as Iran and Libya, translated into nuclear proliferation. It is, however, now better known that Pakistan was

This tendency to project a wider belongingness of the Pakistani nuclear weapon has considerably reduced post 9/11 and after the revelations of the A.Q. Khan network.

clever enough to export only snippets of relevant information and obsolete technologies and equipment. This may have been a clever ploy to retain its status as the only Muslim country possessing nuclear weapons, or a genuine concern for the dangers of proliferation.

PAKISTAN'S NUCLEAR DOCTRINE

There is no official Pakistani nuclear doctrine. Whether as a matter of deliberate policy, or purely by default, but probably because of a bit of both, Pakistan's nuclear doctrine is shrouded in ambiguity. This is not surprising given that most states possessing nuclear weapons seek to exploit the role of opacity and ambiguity by refusing to define the number of weapons in their arsenals or the precise trigger points for nuclear use. So it was that a former Pakistani Foreign Minister, Agha Shahi, wrote in 2000:

> ...a policy of ambiguity would appear to be best for Pakistan's security. Spelling out its nuclear doctrine would detract from the imperative of uncertainty about when a nuclear strike as a last resort would... reinforce maximally credible nuclear deterrence by raising the threshold of Indian calculation of unacceptable risk.[37]

---

37. Agha Shahi, "Command and Control of Nuclear Weapons in South Asia," *Strategic Issues*, March 2000, p.56, as cited in Hussain, n.16, p. 13.

Despite the lack of transparency, however, it is possible to draw out some contours of the Pakistani nuclear doctrine from statements of civilian and military leaders and from the writings on the subject by the Pakistani strategic community.

Minimum Nuclear Deterrence

Like the doctrines of India and China, Pakistani official statements too advocate minimum nuclear deterrence. One year after the conduct of its tests, in May 1999, Prime Minister Nawaz Sharif, in a lecture to the officers of Pakistan's National Defence College (NDC) described minimum nuclear deterrence as "one of the principles guiding Pakistan's nuclear policy."[38] Foreign Minister Abdul Sattar reiterated the same while addressing an international seminar in Islamabad on November 25, 1999. It has been articulated that Pakistani nuclear deterrence does not stem from the quantity of its weapons, but from "its quality, which is primarily a function of the Pakistani leadership to pursue a 'no holds barred' approach towards defensive use of nuclear weapons in the event of a war with India."[39] Therefore, Islamabad, like New Delhi, maintains that the 'minimum' cannot be defined and is, in fact, a dynamic concept based on calculations of the number of nuclear weapons estimated with the adversary, the manner of their deployment, and other technological imperatives such as missile defence. Since these factors impinge upon the survivability of nuclear weapons, and, hence, the deterrence credibility, the quantity of weapons would require to be "upgraded in proportion to the heightened threat of preemption and interception."[40]

Therefore, Pakistan's calculation of minimum is closely linked to its perception of India's nuclear numbers, and its ability to inflict unacceptable damage on India. While the first parameter may be interpreted to mean parity, the second conveys that for nuclear deterrence to work, parity need not be based on "numerical equality of the number of nuclear delivery systems, or of the number of warheads or in the yield of megatons available to each opponent. Parity requires assured destruction capability."[41] The problem, however, arises in defining what would constitute

38. Rajesh Rajagopalan, *Second Strike: Arguments About Nuclear War in South Asia* (New Delhi: Penguin, 2005), p. 51.
39. Rajagopalan, Ibid., p. 14.
40. Ibid., p. 49.
41. Zafar Nawaz Jaspal, "Reassessing Pakistan's Nuclear Strategy," http://www.defencejournal.com, July 2001.

unacceptable damage for a geographically bigger, and an institutionally and economically stronger India. Gen. Mahmud Durrani sought to resolve this problem by suggesting, "Overkill would, by necessity, be built into the response."[42]

Pakistan's construction of minimum nuclear deterrence, however, is not very different from that of India. It is a concept that is less definable in terms of a number and more a reflection of the relatively small amount of nuclear resources being put to optimum use for enhancing the credibility of deterrence.

First Use

Pakistan's main concern has always been to offset India's superior conventional military and its own lack of strategic depth that constrains its ability to pursue a defensive strategy that could allow trading geographic space for reaction time. The nuclear doctrine is aimed at addressing these limitations, and hence, it is not at all illogical that Islamabad retains the option of first use of nuclear weapons, if and when it perceives a threat to the survival of the state. Fearful of the possibility of finding itself at the receiving end in a conventional conflict[43], Pakistan considers its nuclear weapons as a last resort. As argued by Air Cmde(Retd.) Tariq Mahmud Ashraf:

> Being on a weaker military footing... Pakistan's nuclear employment doctrine should assert that since she would be fighting for her very survival as an independent nation state in any future war,... Pakistan... must reserve the right of first use of nuclear weapons and this assertion should be made a part of her nuclear employment doctrine.[44]

The North Atlantic Treaty Organisation (NATO), it may be recalled, followed the same policy in the face of Soviet conventional superiority through the Cold War years. Along similar lines, viewing 'first use' as an "option enhancing policy,"[45] Pakistan dismisses India's offers for a mutual no first use agreement. As explained by Lt. Gen .(Retd.) Sardar Lodi,

---

42. Maj. Gen. Mahmud Durrani, "Pakistan's Strategic Thinking and Role of Nuclear Weapons," *Cooperative Monitoring Centre Occasional Paper*, SAND 2004, available at http://www.cmc.sandia.gov.

43. Pakistani strategists point out that India's capture of just 140 km would wipe out the state because its communication, irrigation, industry and population are all together within that depth. See Syed Rifaat Hussain, "War Against Terrorism: Pakistan's Perspective," *IPRI Journal*, vol 4, no.1, 2004.

44. Hussain, n. 16, p. 11.

45. Stephen Cohen, *The Pakistan Army* (London : Oxford University Press, 1998).

India's offer of a treaty to be signed by the two countries, agreeing not to be the first to use nuclear weapons against each other is one-sided and would benefit India only, as it has a superior conventional force. It may be more apt for both countries to sign a mutual test ban treaty to start with, followed by a no-war pact.[46]

However, for all its emphasis on first use, India need not interpret first use as very early use of nuclear weapons in a conflict. Rather, this posture stems from national compulsion and since the Pakistani notion of deterrence is a situation of perpetual conflict, it *has to project* a low nuclear threshold.[47] This is meant to reinforce its deterrence by using nuclear weapons as an effective shield even against conventional attack. The need for Pakistan to adopt such a position might have been exacerbated once India extrapolated the possibility of a limited conventional war in a nuclear environment. If, despite the acquisition of its nuclear capability, Pakistan was still to face the prospect of fighting a conventionally superior force, then the only manner to stave off such an eventuality was to deter India with the thought that Pakistan would not hesitate to use nuclear weapons if pushed too far back against the wall. But, how far back would be too far back has obviously not been clearly identified. In 1999, an op-ed by three prominent Pakistani leaders stated that Pakistan would resort to a nuclear strike only in the event of comprehensive military defeat, threat to large population centres, or lines of communication.[48] Subsequently in 2002, Gen. Khalid Kidwai, head of the Strategic Plans Division (SPD) that manages Pakistan's nuclear operations, spelt out four distinct thresholds for nuclear use: loss of large parts of territory (space threshold); destruction of large part of land or air forces (military threshold); economic strangulation (economic threshold); and political destabilisation or large scale internal subversion (domestic destabilisation threshold). Since then, however, Pakistan has been quieter on its red lines. In fact, Gen. Asad Durrani even said in 2003, that Pakistan does not "identify those core interests that, if threatened,

---

46. Sardar Lodi, "Pakistan's Nuclear Doctrine," *Defence Journal*, vol.3, no.4, April 1999.
47. Ajay Behera "On the Edge of Metamorphosis" in Ajay Behera and Joseph C. Mathew, eds., *Pakistan in a Changing Strategic Context* (New Delhi: Knowledge World, 2004), p. 36. Emphasis added.
48. Agha Shahi, Zulfiqar Ali Khan and Abdul Sattar, "Securing Nuclear Peace," *The News* (Islamabad), October 5, 1999.

could trigger a nuclear retort... These are elements of operational planning and stating them could betray a country's conventional limits." [49]

By vaguely articulating a range of thresholds likely to trigger nuclear first use, Pakistan has sought to strengthen its strategy of continuing subconventional conflict while checkmating India's superior conventional capability. However, it has been suggested by some military officials that it is most likely that instead of escalating a conflict itself, Pakistan will leave escalation to India, though it would not hesitate from provoking it to a point where Islamabad gets reason to go nuclear!. Lt. Gen. Javed Hassan, commandant of the National Defence College (NDC) of Pakistan argued along these lines at the Brookings Institution in 2002.[50] He opined that if India applied a great deal of pressure in one sector across the Line of Control (LoC) or the International Border (IB), Pakistan would respond with disproportionate counter force which would compel India to escalate beyond a sector to engage Pakistan all along the LoC or IB, and if India's escalation crossed the Pakistani nuclear threshold, the latter will have cause and justification to escalate to the nuclear level. "India will have been shown to have behaved irresponsibly and forced Pakistan to take extreme measures."

> **By vaguely articulating a range of thresholds likely to trigger nuclear first use, Pakistan has sought to strengthen its strategy of continuing sub-conventional conflict while checkmating India's superior conventional capability.**

Such calculations, however, do not stand the test of rationality for they fail to consider the consequences of the same for Pakistan. India could respond in only two ways to a Pakistani nuclear attack – retaliation with or without nuclear weapons. Pakistan assumes that even after being hit with a nuclear weapon, India would not necessarily undertake nuclear retaliation for three reasons: one, given the Indian strategic culture, New Delhi would not have the stomach and the will to undertake nuclear retaliation; second, the major

---

49. As cited in Varun Sahni, "The Stability-Instability Paradox: A Less than Perfect Explanation" in E. Sridharan, ed., *India-Pak Undeterred Deterrence Theory and the Conflict* (New Delhi: Routledge, 2006).
50. As cited in Behera, n. 47, p. 36.

powers would intervene to stop India, especially if Pakistan has undertaken a small, first strike against troops marching into Pakistani territory; third, with Pakistan's slow but steady acquisition of a second strike capability, India would be deterred from nuclear use. One or a combination of these circumstances, it is assumed, would not only allow Pakistan to get away with its nuclear use, but also enable it to achieve its political objectives.

However, these are only assumptions and there is nothing to indicate that they might not prove untrue during the moment of truth. And if, contrary to Pakistani expectations, India did respond with its nuclear arsenal in a decisive fashion to put an end to the "bleeding through a hundred cuts policy," then the consequences for Pakistan could be severe. In fact, unlike Pakistan, Indian writings have sought to describe not what India might do in the event of deterrence breakdown, but rather what needs to be done to prevent such a breakdown from occurring.

Use Against Conventional Force

Considering that Pakistan would, or could, be the first to introduce nuclear weapons into a conflict, it is obvious that it plans for their use even against a conventional attack. Just as the US nuclear doctrine maintained a constant underlying theme that nuclear weapons would be employed against the USSR in any conflict to offset their numerical superiority in manpower and conventional arms, Pakistan too has the same doctrine. As said by Sardar Lodi[51],

> In a deteriorating military situation, when an Indian conventional attack is likely to break through our defences or has already breached the main defence line, causing a major setback to the defences, which cannot be restored by conventional means at our disposal, the government would be left with no other option except to use nuclear weapons to stabilize the situation.

Therefore, unlike India where the nuclear weapon is perceived as a special and distinct weapon of immense destructive potential that defies rational use, except for enforcing deterrence, Pakistan seeks to systematically integrate it as another

---

51. Lodi, n. 46.

weapon into its operational military planning. For India, the impact of the weapon is politico-psychological, while for Pakistan it is military-operational.[52] Islamabad treats its nuclear arsenal as an integral element of its crisis management and military strategy. In fact, analysts like Shireen Mazari have suggested that Pakistan should project its nuclear use being based on a "one rung escalation ladder *knitted tightly with a highly cohesive, state-of-the-art tactical conventional military.*"[53]

Offensive Defence

Given the above, it is natural that Pakistan's nuclear doctrine should be no different from its larger military doctrine of offensive defence. The nuclear weapon is projected as an offensive instrument that holds out the threat of nuclear strike right at the beginning of every crisis, irrespective of its nature and scale, and, at the same time, also a defensive weapon against India's punitive action. This is meant to give Pakistan an opportunity to conduct a swift, conventional assault, mostly in Kashmir, and then use the nuclear shield to prevent/mellow/checkmate an Indian response.

Therefore, there is a huge doctrinal gap between India and Pakistan on this issue. While India sees only retributive utility in nuclear weapons, Pakistan is open to an offensive, military use of the weapon to seek political objectives. Ironically, it seeks to derive deterrence by propagating the nuclear weapon for "total defence," to deter both nuclear and conventional attacks, and against counter-force and counter-value targets.[54] It seeks security in the idea that nuclear war cannot be prosecuted for any rational political objective, while attempting the same through its own weapons.

REQUIREMENTS OF PAKISTAN'S NUCLEAR DETERRENCE

To offset a possible conventional attack from a superior Indian force, Pakistan's nuclear deterrent must essentially meet the following requirements:

52. Tellis, n. 34, p. 301.
53. Unpublished paper on South Asian Peace and Security Doctrine, presented at a seminar in Dhaka in 2000 and as cited by Pattanaik, n.35. Emphasis added.
54. Lt. Gen. (Retd) Kamal Matinuddin had written in 2002 that "[Indian] population centers, industrial assets, resources, and nuclear or conventional forces of the enemy can all be targeted... While giving primacy to counter-value targets, the enemy's concentration of armoured formations in the rear should also be considered as targets for a nuclear strike". As cited in n.16, SASSu, p. 13.

Not be Too Small a Nuclear Force

Despite professing minimum nuclear deterrence, Pakistan is cautious not to build too small a nuclear force since "small forces would presumably be easier to destroy in a first strike and, therefore, have less credibility as a deterrent because the surviving forces may not be able to retaliate."[55] In fact, though immediately after the tests, Pakistan was satisfied with existential deterrence based on uncertainty, it now believes that development of a second strike capability is critical for credible deterrence. In this, it may have been influenced by writers such as Andre Beaufre who had suggested in the case of France that "minor nuclear powers can deter much larger nuclear forces if they can hold out the threat of nuclear riposte, even if the riposte is weak."[56]

This desire could expectedly grow as India acquires and deploys some form of a limited missile defence (MD). Pakistan strongly believes that an MD in India, coupled with Pakistan's lack of strategic depth would destabilise regional deterrence. The Indian S-300 and Akash systems are expected to be able to intercept Pakistan's short-range ballistic missile (SRBm) and medium-range ballistic missile (MRBMs) while the Antey 2500 could effectively intercept even the intermediate-range ballistic missiles (IRBMs).[57] Islamabad fears that such a capability would "provide an elated sense of security and prompt pre-emptive impulses from India."[58]

Pakistan's response to this is likely to be to go in for its own defence systems as well as build up its offensive forces to overwhelm Indian defences. It is not a stray coincidence that the rate of nuclear and missile activity in Pakistan has risen manifold over the last few years. President Musharraf admitted as much in July 2005 when he said the country's nuclear programme is progressing "ten times faster than before."[59] While some of this might be an exaggeration, undoubtedly, the pace

---

55. Jaspal, n. 41
56. Rajagopalan, n. 38, p. 27.
57. Ghazala Yasmin, "Missile Dfence in South Asia: Implications for the Region," http://www.issi.org.pk/2006_files Also see Surya Gangadharan, "Ballistic Missle Defence for India," *Strategic Affairs*, http://www.stratmag.com/issueDec-15
58. Fear, as stated by no less than Director Arms Control and Disarmament Affairs, Strategic Plans Division, Khalid Banuri, "Missile Defences in South Asia: The Next Challenge," *South Asian Survey*, 2004, p.197.
59. "Pak Strategic Missiles can Penetrate Proposed Indian BMD Shield: Gen Musharaff," http://www.pakistanidefence.com, July 26, 2005.

of the programme has accelerated. And for buttressing its nuclear defensive and offensive capabilities, Pakistan is likely to benefit from its all weather friend, China.

Capable of Quick Assembly

Gen. Musharraf has stated that Pakistani nuclear weapons are presently in a "disassembled state." However, the level of disassembly, and naturally therefore, the time taken for assembly is not clear. It could mean a state where the weapons, i.e. the frame and fissile core, are kept separately at a storage facility, and delivery systems are kept elsewhere; or where weapons (frame and core) and delivery systems are stored at the same military bases for rapid mating; or, where weapons (fissile cores) are kept separately but the frame is already mounted on delivery systems. The Pakistani nuclear arsenal is presently believed to be in the third state of disassembly.

This requirement is believed to stem from the need for rapid deployment since Pakistan conceives the possibility of having to use the weapon first, even in a conventional conflict. Therefore, the necessity to "undertake steps to produce, equip, deploy, man and exercise ballistic missiles with operational units."[60] These, however, may be kept at a low alert status, given that India has a no first use posture and Pakistan can assume a period of warning before a crisis builds up. Nevertheless, it does realise that time would be of the essence in the case of numerical inferiority.

Diversified Weapons Based on Highly Enriched Uranium and Plutonium Designs

Initially, Pakistan opted for the plutonium (Pu) route to nuclear weapons. With the natural uranium-heavy water moderated reactor, Karachi Nuclear Power Plant (KANUPP), becoming critical in 1971, Pakistan believed that by acquiring a reprocessing plant, it could access plutonium. This, however, proved to be easier thought than done. Not only did KANUPP prove to be inefficient and under International Atomic Energy Agency (IAEA) safeguards, but Pakistan's contract with France for the reprocessing plant was jettisoned by US non-proliferation

---

60. Rodney W. Jones, "Pakistan's Nuclear Posture: Quest for Assured Nuclear Deterrence – A Conjecture," *Spotlight on Regional Affairs* (pubished by Institue of Regional Studies, Islamabad), vol 19, no. 1, January 2000.

concerns and stood cancelled in June 1978. Meanwhile, as a hedging strategy based on a conscious decision to accelerate its nuclear programme after 1974, Pakistan had already begun active pursuit of the uranium enrichment technology with a formal launch of a project the same year. In this, it met with far greater success since A. Q. Khan surfaced at just the right time with the stolen designs of centrifuges to procure enriched uranium,[61] and today, Pakistan's nuclear weapons are primarily based on highly enriched uranium (HEU). The main enrichment facility exists at the KRL at Kahuta and is being supplemented with a new enrichment facility near Wah (Gadwal uranium enrichment plant). Meanwhile, smaller, pilot scale enrichment facilities exist at Chaklala, Sihala and Golra.

Pakistani nuclear tests carried out in 1998 were of low yield, HEU fission weapons of varying designs, yield and sizes. Pakistani officials themselves have provided different yields of the five devices tested on the first day with some suggesting it to be of 25 and 12 kilotons (kt) (besides three sub-kiloton) devices, and A.Q. Khan claiming that one of the devices was a boosted fission device of 30-35 kt and the other four being tactical weapons.[62] The sixth device tested on May 30, 1998 is believed to have been a plutonium weapon, though there is no consensus on this.[63] In any case, according to some Western sources, Pakistan has at least two different basic nuclear weapons designs. The first developed by the Pakistan Atomic Energy Commission (PAEC) for air delivery has a range of about 10-20 kt and the other with a larger yield of about 15-25 kt is an HEU, implosion warhead design "of proven reliability" procured by Pakistan from China in the early 1980s.[64] Pakistan has also devoted attention to the miniaturisation of nuclear warheads for making them light, compact and easily deliverable. Most of its missiles have a payload of 500 kg and the Pakistani nuclear warhead based on the Chinese design is expected to weigh about the same.

---

61. For details on A. Q. Khan's operations, see Corera, n. 30.
62. IISS Dossier, n.2, p. 33
63. The American Los Alamos Laboratory had claimed it to be a plutonium device on the basis of air sampling. But the report was contested by Lawrence Livermore Laboratories. It may also be recalled that after the North Korean nuclear test in October 2006, which was believed to be a plutonium weapon, President Musharraf denied any Pakistani role since it did not have a plutonium weapon.
64. A. Q. Khan claimed as much in 1998. IISS Dossier, n.2, p. 32.

Tactical Nuclear Weapons (TNW)

Development and deployment of atomic artillery weapons has been denied by Gen. Kidwai[65], but some others like Brig. Saeed Ismat have written in favour of tactical nuclear weapons.

> We should have well defined and declared strategy of using our ultimate choice of nuclear weapons aimed at the destruction of those military forces, which have intruded in our territory. Our aim should be the destruction of the invading military forces only and not his civilian population. We should aim to strike with tactical nuclear weapons at the base of enemy offensive... Some standard artillery guns, rockets, and missiles can deliver these, so can helicopters and aircraft. Such low yield, high radiation nuclear weapons can quickly and decisively alter the entire course of battle. Though tactical in characteristics these, can produce strategic effect.[66]

According to this viewpoint, given Pakistan's lack of geographical depth and inferior military resources, TNW are the only possible tools for tilting the balance in favour of Pakistan by threatening enemy intruders with a planned employment of these weapons. This strategy, in fact, has been propounded as being a more moral one and described as "Pakistan's Military Doctrine of Necessity." Also, given that Pakistan projects its nuclear weapons as militarily usable, this "conventionalisation" of its nuclear weapon supports a force posture capable of conducting tactical nuclear operations.

Credible Delivery Systems

Quite like India, the first nuclear delivery platforms available with Pakistan were aircraft. F-16 fighters[67] have been suitably modified to carry nuclear bombs, even as Mirage V and Chinese produced A-5 are also available.[68] The modifications,

---

65. Cotta-Ramusino, n.4.
66. Brig. (Retd.) Saeed Ismat, "A Conceptual Nuclear Doctrine", *Defence Journal*, vol.3, no.8, March 2000.
67. Pakistan is currently estimated to have 32 F-16s in service, deployed in 3 squadrons. It awaits delivery of another 75 from the US as reward for its contribution to the global war on terror.
68. Significantly, the US claims to have taken care not to provide Pakistan with any equipment that would facilitate nuclear delivery missions, such as the electrical mechanisms necessary for safe maintenance, transportation and delivery of nuclear weapons by F -16s.

however, had the disadvantage of reducing speed and manoeuvrability. Therefore, even as weapon delivery flight training and bomb design modifications went on, Pakistan began to explore the option of procuring ballistic missiles (BMs). In any case, after 1985, under the Pressler Amendment further delivery of aircraft was impossible, and BMs were seen as the new potent symbols of credible deterrence.

A. Q. Khan, once again, proved successful in this field when he struck a deal with North Korea for the liquid fuelled No-dongs. Renamed Ghauri in Pakistan, versions of different ranges of this missile have been regularly tested for up to 1,500 km. Meanwhile, another programme run by the National Defence Complex with the Pakistan Space and Upper Atmosphere Research Commission and PAEC has concentrated since the 1980s on solid fuel propelled short-range ballistic missiles, the Hatf series. Available in different ranges, these missiles are believed to be based on the Chinese M-11. However, it is the 290 km, single stage, solid fuelled and road mobile Ghaznavi or Hatf 3 which is declared to be nuclear capable and operational with the army from 2004 onwards. Pakistan also has a vigorous research and development (R&D) and procurement programme for MRBMs of a range of 650-1,000 km. The Shaheen1 (600-800 km) from this category is nuclear capable and in service from 2003. Shaheen 2 (two stage, solid fuel) with a range of 2,000 km and carrying multiple warheads, and Ghauri 2 (liquid fuel) also of about the same range, are still undergoing tests. The former is expected to provide the true deterrent to Pakistan while the latter would be an alternative. Over the years, Pakistani missiles have been equipped with better guidance systems, longer ranges and better accuracies. The Babur, a 500 km, nuclear capable cruise missile, is also undergoing testing, as is the Ghauri 3 with a design range of 3,500 km and possibly drawn from the North Korean Taepodong missile.[69]

Considering the active missile programme of the country, Pakistan's keenness to equip itself with a credible deterrent delivery capability based on mobility, dispersion and concealment is evident. It seeks through these measures to enhance the survival of its nuclear force against a decapitating strike. Meanwhile, the consistent pursuit of missiles of ever longer ranges may be explained for two

---

69. For more detailed information on Pakistani missiles, see "Pakistani Nuclear Forces 2006," *SIPRI Yearbook, 2006* (Oxford: Oxford University Press, 2006).

reasons: one, to be able to hit deeper into India; and secondly, to base its own missiles in more remote and less accessible mountainous areas such as Baluchistan in order to enhance survivability and Pakistan's second strike capability.

Accumulation of Fissile Material

Given the secrecy and opacity that normally shrouds nuclear developments, there are no confirmed figures available on Pakistan's fissile material stocks. According to International Security Information Service (ISIS) (London) estimates, at the end of 1999, Pakistan had 585-800 kg of HEU and 1.7-13 kg of separated plutonium.[70] A more recent estimate, however, places Pakistan's HEU stockpile at 1,300 to 1,500 kg and 90 kg of Pu.[71] This is roughly expected to translate into about 65 HEU weapons at 20 kg HEU per weapon and about 15 Pu weapons at 6-8 kg per weapon. However, there can be no direct derivation of the number of weapons from the fissile material stockpile since it is a more complex function of specific warhead designs, and their efficiency. Only some rough estimates are possible.

In any case, it could be said with some certainty that Pakistan is keen to accumulate as much fissile material as possible in order to increase its arsenal to roughly what India is believed to have. Its extreme discomfort at the thought of a Fissile Material Cut-off Treaty (FMCT) freezing its numerical inferiority by proscribing future production of fissile material for weapons is evident in its approach to the treaty in the Conference on Disarmament (CD). Refusing to even call it a cut-off treaty since that has only a prospective connotation, Pakistan desires the treaty to deal with existing stocks as a way of reducing asymmetry. Key aspects of the Pakistani official position on the matter include[72]:

Pakistan is keen to accumulate as much fissile material as possible in order to increase its arsenal to roughly what India is believed to have.

70. David Albright, "Securing Pakistan's Nuclear Weapons Complex," October 2001, http://www.isis-online/publications

71. Zia Mian, A. H. Nayyar, R. Rajaraman and M. V. Ramana , *Fissile Materials in South Asia: The Implications of the US-India Nuclear Deal,* Draft Report for the International Panel on Fissile Materials, July 2006, pp. 11-15.

72. As cited in Gaurav Rajen and Michael Vannoni," Fissile Materials Control in South Asia: Regional Analyses and Potential CBM," *Cooperative Monitoring Centre Occasional Paper*, February 2006 www.cmc.sandia.gov/links/cmc-papers/occasional-papers.

- Progressive reduction and eventual elimination of existing stocks of fissile materials.
- Schedule for transfer of stockpiles into civilian use with verification (transfers must first be made by the states with the largest stockpiles).
- Caps on future stocks to be accompanied by a reduction in asymmetries of existing stocks.

Asymmetry in fissile material stocks is a genuine Pakistani concern and it would be natural to assume that it seeks to exploit its negotiating position to stall

Asymmetry in fissile material stocks is a genuine Pakistani concern.

movement and buy time for accumulating as much fissile material as possible. It is revealing that besides HEU, Pakistan has also been looking at the Pu option with fresh eyes since its 50 Mwt reactor went critical at Khushab in 1998. Built with Chinese help and unsafeguarded, it has the capacity to produce 10-15 kg Pu every year. An unsafeguarded pilot scale reprocessing facility is now operational at the New Labs at the Pakistan Institute of Nuclear Science and Technology (PINSTECH) complex near Rawalpindi. Meanwhile, a second reactor is being built at Khushab and has been variously estimated at having a capacity between 40-100 Mwt or even 1,000 Mwt.[73] If the latter estimate is true, the reactor could annually produce about 200 kg Pu that would be enough for 30-40 nuclear weapons a year. However, before getting alarmed by such estimates, it must be pointed out that Pakistan does not yet have the reprocessing capacity for such amounts of spent fuel.

UNCERTAINTIES OF NUCLEAR DETERRENCE

While the true value of deterrence lies in its remaining untested, or holding up in case of a crisis, the paradox is that for deterrence to be credible, one has to be prepared for it to break down. This possibility needs to be factored in by India with respect to Pakistan that has an offensive nuclear doctrine. In an approach best suited to its national interest, Pakistan has projected a carefully cultivated

---

73. IISS Dossier, n.2, p. 21.

strategy of escalation spinning out of control if India launches a major conventional attack. Extremely intelligently, Pakistan has worked at reducing the risk of retaliation against its proxy war, by heightening the risk of war if India were to press action. And, simultaneously, it has sought to reduce the risk of war by threatening that any war could turn into an all out nuclear war.

In Western literature this has been described as the "risk maximizing approach" that relies on the enemy's fear that pressure exerted from his side could "provoke a viscerally violent response rather than a rationally restrained one,"[74] By making nuclear threats, it seeks to manipulate risks to its advantage even if following through on them would be nothing short of suicidal for itself. Rather bombastically, it has been stated by serving military men, "If Pakistan is being destroyed through conventional means, we will destroy them by using the nuclear option; as they say, if I am going down the ditch, I will also take my enemy with me."[75] Whether this would really happen or not, Pakistan banks on uncertainty bordering on desperation, or irrationality about its actions for deterring India.

Such a policy of brinkmanship that exploits uncertainty and rests on a perception of irrationality, however, carries the risk of deterrence breakdown. There is no guarantee that the threshold of tolerance will never be breached or that the other side may not actually undertake an offensive and call Pakistan's bluff. In fact, if this were to happen, it would actually be in the best interests of Pakistan to avoid the use of the nuclear weapons and retain the credibility of its nuclear deterrence for the future. It may be recalled that one of the reasons that the US did not use the nuclear weapon in the Korean War in the 1950s was the fear that if the bomb was used but did not achieve its purpose, then it would "undermine the very foundations of American strategic policy which rested so heavily on the

> **A policy of brinkmanship that exploits uncertainty and rests on a perception of irrationality, however, carries the risk of deterrence breakdown.**

---

74. Thomas Schelling, *The Strategy of Conflict* (London: Oxford University Press, 1960).
75. Lt. Gen. Javed Ashraf Qazi made this statement to the Press in 2002 at the height of the India-Pak stand-off. Cited in Rahul Roy-Chaudhury, "Nuclear Doctrine, Declaratory Policy and Escalation Control," Stimson Centre South Asian Regional Security Project, April 2004.

weapon's omnipotence." Therefore, as the US discovered, the only way to maintain the credibility of the bomb was not to use it. "Deployment meant running the risk that its mysterious power might be revealed as a sham – that the Emperor might be discovered to have no clothes."[76]

However, there are a few scenarios wherein Pakistani nuclear weapons could come into play and these need serious consideration.

As a Result of Premeditated Attack

This could result from Pakistan mounting a conscious and planned massive (counter-force and counter-value), decapitating nuclear strike against India to end an unfavourable conventional confrontation. Pakistan would hope to wreak massive destruction in order to spread chaos and demoralise the remaining public and leadership enough to refrain from retaliation. It would also hope that in the remote possibility of an Indian nuclear response, it would be weak enough for Pakistan to handle since all major Indian delivery sites would have been destroyed. While this may be a dream scenario for Pakistan, fortunately for India, Pakistan does not yet have the capability to undertake such a strike. It cannot hope to obviate all or even a substantive part of the Indian arsenal and would only end up inviting assured destruction. Moreover, there can be no reason to assume that Pakistani decision-makers, civilian or military, could be so completely irrational. Every leader has a stake in the survival of his state because it is his source of power and, hence, a deliberate suicidal mission by a rational leader appears improbable.

Unless a radical Islamist leader (military or civilian) was in the seat of power, indoctrinated with a suicidal mentality that places little value upon his own survival or that of his nation, such a person could launch a pre-mediated nuclear strike on India in a bid to destroy the enemy, even at the cost of great sacrifice. One could, however, debate the possibility of such an eventuality. Radical Islamist political parties have not been able to garner significant votes in elections. On the other hand, the rise to power of a radical military man through a military coup is possible. But, could he alone, in complete disjunction with the administration, be able to commandeer the country's nuclear arsenal? Nuclear

---

76. Degroot, n. 12, p. 188.

infrastructure involves a large number of people who do impose a system of checks and balances. The SPD claims that Pakistan follows the three-rule principle for authorisation of nuclear use. Could all three people in the nuclear loop be equally motivated/deranged? Moreover, one must concede that under US pressure since 9/11, Pakistani nuclear command and control has matured from a personalised, ad hoc system into a more institutionalised one, that one hopes could not only survive regime change and domestic political upheaval, but also neutralise an irrational leader.[77]

As a Result of Accident or Miscalculation

This could occur in three ways. Firstly, as a result of a failure of the Pakistani command and control(C2) system. Given the small nuclear force and the Pakistani posture of first use, its C2 structure does require some delegation of authority. For reasons of survivability too, geographic dispersion of the small arsenal is a necessity, which, nevertheless, brings its own challenges of effective and timely communication. Moreover, as launch authority flows downward, the human factor becomes significant and any unauthorised launch of nuclear weapons, though remote, cannot be ruled out. Secondly, if Pakistan wrongly perceives its nuclear force as having been inadvertently destroyed by a conventional Indian counter-force strike, simply because it happened to be deployed in the region. Pressures of time in a crisis can lead to faulty decision-making without checking facts. Thirdly, as a result of an army misadventure. The last possibility is actually feasible given the past record of the Pakistani military in planning and authorising offensive ventures. In an attempt to distract attention from domestic unrest, or genuinely believing that it could pull off a strategic success against Indian conventional forces, deriving confidence from its recent large acquisition of modern conventional weapons, the army could be expected to indulge in such thinking. The Pakistan Army, in any case, has a high self-image as the defender of the nation. Unfortunately, though, this does not detract from the conclusion that had been arrived at by Sun Tzu, "Military organizations that assume policy responsibility

---

77. The Strategic Plans Division was created in 1999, the National Command Authority was set up in February 2000 and an Export Control Act passed in September 2004.

often make poor strategic choices." In fact, even the organisation theory identifies a set of parochial military interests and biases that lead senior officers to favour offensive doctrines, preventive wars, preemptive strikes, decisive counter-force options without thinking them through. Kargil was one such incidence and the flawed strategic thinking that led to it has been criticised by many Pakistani analysts, including retired military men.[78] And yet, there are several who blame the civilian government of the time for buckling under US pressure and denying the Pakistani military an opportunity to avenge past wrongs.

In Desperation or Despair

If the conventional military might of India were to breach the four thresholds identified by Gen. Kidwai, thereby endangering Pakistan's *survival as a nation*, Pakistan may use its nuclear weapon in desperation. The same is also possible in a moment of despair, if the Pakistani leadership finds itself in such a hopeless situation, domestically and internationally, that it finds *greater sense in self-annihilation than life after war*. Indications of this thinking were provided in an interview of a retired Pakistani general who claimed to speak for several others when he said that the situation in the country was so despondent as to merit a fresh start after a nuclear war!!

India could help avert nuclear use by Pakistan in desperation by clearly articulating the military objectives of a conventional strike. It will have to be stated, as has been done in the past, that removing Pakistan from the face of the political map of the world was not an Indian political or military objective. Therefore, with Pakistan's survival not at stake, there should be little reason for a resort to nuclear weapons. Of course, this logic can work only if in Pakistani thinking the survival of its military regime is not equated with that of the nation-state.

In the case of the second situation where a nuclear exchange is brought on by Pakistan's sense of despair, it needs to be pointed out to Pakistan, that despite the country being in dire straits – economically, politically, socially – the situation could

---

78. For instance, Maj. Gen. Durrani observed that "Kargil was the result of flawed strategic thinking in Pakistan." Maleeha Lodhi attributes Kargil to "systemic flaws" in Pakistani decision-making process which is "impulsive, chaotic, erratic and overly secretive." Maleeha Lodhi, "Anatomy of a Debacle," *Newsline*, July 1999, pp. 32-33.

be salvaged if the country could reorient its priorities differently. Ever since independence, Pakistan's attention and energies have been largely focussed on negating or eroding India's achievements – of democracy, secularism, economic development — by fomenting trouble and fanning insurgencies. A proxy war has been sustained through terrorism based on the radical ideology of *jihad*, physically supported through a network of training camps, and financially aided by narco-trafficking and gun-running.

While India has been badly bled by such policies, it has not been possible for Pakistan to escape the repercussions of playing with fire. Terrorist organisations have acquired a mind and agenda of their own. The easy availability of weapons[79], and an illicit drug trade, as also distorted development priorities have led to a decline in social sector spending on public education so that *madrassas* remain the only option for many. With an unemployment rate of nearly 16 per cent, and *madrassa*-trained youth anyway unable to compete for modern jobs in the government or the limited private sector, joining *jihad* presents itself as a means of gainful employment for the majority. These trends, however, are reversible over time given the requisite political will of the Pakistani leadership.

As a Result of Nuclear Use by Terrorists With/Without Government Support

One positive outcome of the revelations of the A.Q. Khan proliferation network was to compel Pakistan to enhance the security of its nuclear material, technologies and weapons in order to address Western fears of nuclear terrorism. Amongst the measures undertaken, the five-year National Nuclear Safety and Security Action Plan initiated by the Pakistan Nuclear Regulatory Authority (PNRA) stands out for establishing a robust nuclear security regime that would minimise chances of theft of a nuclear weapon or fissile material. An official of the PNRA has claimed that "controls around various installations and radiation facilities in Pakistan are enough to deter and delay a terrorist attack...."[80]

However, three possibilities of nuclear terrorism, with or without

---

79. It is estimated that nearly two million small arms are in circulation in Pakistan while about three million rest in clandestine stockpiles available to militant outfits ready to take up the cause of Kashmir.
80. Abdul Mannan, *Preventing Nuclear Terrorism in Pakistan: Sabotage of a Spent Fuel Cask or a Commercial Irradiation Source in Transport* (Stimson Centre, April 2007). p.4.

government support, cannot be dismissed: one, that of a fundamentalist army general or a radical government in power itself clandestinely passing on a weapon to non-state actors for a strike against India. India should be able to deter such a possibility by stating a clear policy of treating this as first use of nuclear weapons and resorting to massive retaliation against the culpable state; two, the Taliban or Al Qaeda terrorists acquiring nuclear material because of their links with some retired military and Inter-Services Intelligence (ISI) officials and nuclear scientists and using them to manufacture a radiological dispersal device (RDD)[81]; and, three, the possibility of a terrorist strike on, or sabotage of, Indian nuclear facilities, including while spent nuclear fuel is being transported. Both these latter cases would cause massive contamination, panic, economic damage, and political instability besides degrading response capabilities and having a traumatic socio-psychological impact. India's response to this will primarily have to be to enhance the preparedness of its civil defence organisation. India has been training for the last few years to handle such scenarios with the institution of the National Disaster Management Authority. The terrorist acts would also, most likely, lead to more decisive action being taken across the LoC to hit out at terrorist camps and infrastructure. And, that's the time when nuclear deterrence will be tested.

CONCLUSION

The above analysis clearly indicates that Pakistan sees the nuclear weapon as insurance of its survival. What is extremely significant is that there is strong domestic public support for nuclear weapons. According to one analyst, "Workers and peasants, *maulvis*, white collars and intellectuals worship the Bomb" and even perceive it as a "great comforter, giving them spiritual strength to endure the hardships of life."[82] This support is largely a result of the conditioning of the domestic audience by the Pakistan Army that the country

---

81. This has been referred to as the most worrisome and real trend by a US South Asia analyst Lisa Curtis in her testimony deliverd before the Subcommittee on the Middle Wast and South Asia and the Subcommittee on Terrorism, Non-proliferation and Trade of the Committee on Foreign Affairs of the US House of Representatives on June 27, 2007. For text of the testimony, see http:www.heritage.org.
82. Artem Rudentsky, "Understanding Nuclear Pakistan: Global, Regional and Domestic Dimensions," *World Affairs*, vol.9, no. 3, Autumn 2005, p. 51.

faces a serious security threat from India which can be met only if the army remains a major political decision-maker in the affairs of the country and retains a free hand with its nuclear policy. The latter, in fact, has been clearly projected as a military domain, with the army showing little tolerance for civilian interference. By all indications, the Pakistani nuclear programme will remain military driven until such time an effective democracy can take root.

The Pakistani nuclear programme will remain military driven until such time an effective democracy can take root.

Pakistan has an intelligent and rational nuclear policy best suited to its national security needs. Though bound by minimum nuclear deterrence, since a free run of resources is anyway not available, the first use nuclear doctrine makes a deliberate attempt to demonstrate irrationality and heighten the nuclear danger for two audiences: one, to instill fear in India that it has a low nuclear threshold; and secondly, to attract international intervention on Kashmir. Pakistani nuclear weapons play an important role in enhancing its defensive capability to meet the perceived threat from India and are designed to deter both conventional and nuclear aggression. In the process, Pakistani leaders of every hue have not shied away from making loud pronouncements on nuclear use, which according to some Indian analysts, have even followed a clear pattern – that of nuclear threats being louder during the beginning or end of a crisis and not during the crisis.[83]

However, doctrines alter with change in capabilities, and the same is true for Pakistan too. From first use but last resort, Pakistan's nuclear weapons doctrine today aspires for first use with second strike capability in order to enhance nuclear deterrence. But, how would conventional modernisation and growing nuclear and missile capability affect the country's nuclear doctrine? Would a better-matched conventional capability with India make Pakistan more, or less, restrained to undertake adventurous offensives? And, less or more prone to nuclear bluster? Would improved survivability of its nuclear arsenal make a no first use posture acceptable to Pakistan? In a normal nuclear dyad, this should

---

83. For more on this, see Rajagopalan, n.38, pp. 56-57.

have been so. But, it appears less likely in the case of Pakistan since it is a revisionist nuclear power. Even though Agha Shahi had said, "The threshold of nuclear use will be inversely proportional to the level of balance or imbalance in conventional forces," since Pakistan seeks a change in *status quo*, the acquisition of defensive conventional weaponry may not translate into nuclear restraint. In fact, despite technology and capability advancements, some nuclear facts are likely to remain unchanged:

(a) Nuclear weapons will remain central to Pakistani national security.

(b) Till such time as Pakistan finds it prudent to abandon its proxy war against India, or give up its revisionist designs, it will retain first use doctrine.

(c) Despite large-scale modernisation of conventional forces, Pakistan will seek deterrence against an Indian conventional attack by projecting easy use of nuclear weapons.

(d) Given the continued centrality of nuclear weapons to its national security, Pakistani priorities in the next 10-15 years will be to improve survivability, penetrability and improvements in its command, control, communications, intelligence (C3I) capabilities. This will be achieved through creation of hard and deep buried storage and launch facilities, air defence around strategic sites, mobile missile units, concealment and deception, and possibly a strategic triad.

(e) Acquisition of missile defence to nullify India's advantage in this field and the simultaneous development of counter-measures would be undertaken, with significant Chinese help.

Since nuclear deterrence is essentially a mind game, Pakistan cannot be grudged any of the above actions. At the same time, India need not be

Pakistan will seek deterrence against an Indian conventional attack by projecting easy use of nuclear weapons.

completely out of depth in dealing with a nuclear Pakistan. India must understand the role of nuclear weapons in the Pakistani national security psyche and its dependence on them. This would enable it to not be unnecessarily taken in by the bluster and become self-deterred. At the same time the

dangers of nuclear escalation must be realised and treated with the seriousness they deserve. In addressing the nuclear threat from the Pakistani state, India must strengthen it own nuclear deterrence. And, for addressing the contemporary threat of nuclear use by non-state actors, India would do well to enhance its civil defence preparedness, and get the US to put pressure on Pakistan for greater safety and security of its nuclear assets and for the further refinement of its command and control systems.

IRANIAN POLITICAL SYSTEM AND THE IRGC

SHELLY JOHNY

INTRODUCTION

The invasion of Iraq in 2003 was seen as an attempt by the US government to begin a process of democratising the governments in West Asia. The lack of political freedom and inability to express dissent were seen as factors that contributed to the rise of radical Islam in the region. This is a marked change from the policy that the US had followed towards the region right from the days of the Cold War. During that period, the Western nations, led by the US, had dealt with, and provided support to, the monarchies and dictatorships in West Asia to deter the spread of Communism. Iran, under the autocracy of the Shah, was the one of the biggest allies of the Western camp during the 1960s and 1970s. The relationship between Iran and the US was often compared with the close ties that existed between Israel and the US. Iran was the beneficiary of US largesse and even of the latest military hardware, some of which was not accessible to even fellow North Atlantic Treaty Organisation (NATO) allies of the US. The beginning of 1979 saw one of the biggest realignments of the Cold War alliance system that existed in the West Asian region. The Iranian revolution led to a loss of an important ally as far as the West was concerned and was a massive setback to US interests in the region. After a turbulent decade, wherein there were several incidents that could have led to war between the two sides, the 1990s was a period during which the US and Iran politically distanced themselves from each other.

The situation altered dramatically with the September 2001 terrorist attacks

Shri Shelly Johny is a Research Associate at the Centre for Air Power Studies, New Delhi.

against targets in the US. Though there had been a level of cooperation between the US and Iran with regard to Afghanistan, tensions between the US and Iran have increased on the issue of Iran's nuclear programme. The US has also accused Iran of providing training and support to Iraqi Shia militant groups who, in turn, launched attacks against occupying US troops. Regime change in Iran has become one of the stated objectives of US foreign policy. Even though the US and Iran have had no diplomatic relations with each other since 1979, successive US governments have never come this far in openly calling for the overthrow of the Iranian government. The presence of ideological hardliners like the neo-conservatives in the US Administration and the changed geo-political situation in West Asia after the downfall of Saddam can be factors that contributed to such a change in US policy towards Iran. Saddam's regime was seen as a bulwark against Iranian expansionism in the region. The disappearance of this major obstacle has increased the threat perceptions of an Iran trying to spread its hegemony.

The Iranian regime is often widely described as a rabid theocracy in Western media sources. The rising rhetoric of Iranian President Mahmoud Ahmadinejad and the occasional statements by Supreme Leader Ayatollah Khamenei have given the impression that Ahmadinejad is responsible for deciding the state policy on major issues in Iran. Being a former member of the Islamic Revolutionary Guards Corps (IRGC), the revolutionary armed force of the Islamic Republic, Ahmadinejad's rise is seen as proof of the IRGC's increasing influence in Iranian politics. The emphasis in this paper will not be on giving a detailed account of the course of Iranian politics since the revolution. Instead, it will try to understand the nature of the Iranian political system as it exists today, with special emphasis on civil-military relations and the role of the IRGC in politics. It will look at the major changes that have occurred in the Iranian political system since the revolution of 1979 and identify the important institutions and factions in Iranian politics.

THE IRANIAN POLITICAL SYSTEM AND ITS INSTITUTIONS

The Supreme Leader

In order to comprehend the nature of Iranian politics since the revolution of 1979,

it is imperative to have an understanding of the Iranian political system and its various institutions. The system of government that came into being in Iran in 1979 was unlike any other system that had existed until then and was called the *vilayat-i-faqih* which means the rule or governance by learned Islamic jurisprudence. The most powerful institution in the Iranian political system is the office of the Supreme Leader. The Iranian Constitution has given the highest authority to the Supreme Leader. This position was created after the revolution to give Ayatollah Khomeini, the leader of the revolution, absolute control over the political system. More than the constitutional guarantees, Khomeini's own personality and popularity increased the stature of the Supreme Leader in the eyes of the Iranian public. The power that Khomeini's successor, Ayatollah Khamenei enjoys is a continuation of this legacy, despite Khamenei's own lack of charisma and popularity. Khomeini had earned the right to be Supreme Leader because of his political leadership and theological qualifications as a *marja-e taqlid* or Grand Ayatollah. As Khamenei did not hold such a qualification, the Iranian Constitution was amended and the requirement that the Supreme Leader should be *marja-e taqlid* was dropped.

The Supreme Leader is the commander-in-chief of all armed forces and has the authority to declare war or peace and mobilise the armed forces. He enjoys the right to appoint and dismiss six clerical jurists in the Council of Guardians, the head of the judiciary, the president of the state radio and television, the supreme commander of the Islamic Revolutionary Guards Corps and the supreme commander of the regular military and security services.[1] The Supreme Leader appoints a number of his representatives in every state ministry and institution and in most of the revolutionary and religious organisations. Almost all the representatives are clerics and are of the rank of *hojjatolislam*. These representatives are more powerful than

> **The Supreme Leader is the commander-in- chief of all armed forces and has the authority to declare war or peace and mobilise the armed forces.**

---

1. Shahram Akbarzadeh, "Where is the Islamic Republic of Iran Heading?" A*ustralian Journal of International Affairs,* vol. 59, no. 1 2005, p. 27.

the ministers and other government functionaries. These representatives are present in the ministries in the executive branch, the armed forces and security services, provinces, revolutionary and religious organisations and, finally, the Iranian cultural centres in foreign countries.[2] Besides these powers, the Supreme Leader has the authority to issue proclamations for holding popular referenda. He is the final arbitrator in disputes between the executive, the legislative and the judiciary. This is in a situation where mediation efforts by the Expediency Council have failed.[3]

The President

The president of Iran is the head of the executive, according to the Iranian Constitution, which was revised in 1989. Before the revision, the powers of the executive were divided between the president and the prime minister. The president's power was ceremonial in nature while real power lay in the hands of

> **The president of Iran is the head of the executive, according to the Iranian Constitution which was revised in 1989.**

the prime minister. This resulted in friction between the two leaders, especially when the two were from different factions. This happened especially during the tenures of Presidents Bani Sadr and Ali Khamenei. The clerics in the Assembly of Experts had created this system to prevent the emergence of a presidential dictatorship that could challenge the concept of *vilayat-i-faqih*. In 1989, the position of prime minister was abolished and the powers of that post were transferred to the president. Presently, the president has the power to appoint and dismiss the ministers who must be confirmed by the Parliament.[4] The president and his ministers can be removed only through a two-thirds majority no-confidence vote by the Parliament. The president of Iran is the second most powerful official in that country. But the power of the president is limited to the social, cultural and

---

2. Wilfried Buchta, *Who Rules Iran? The Structure of Power in the Islamic Republic* (Washington, DC: Washington Institute for Near East Policy and Konrad Adenauer Stifung, 2000), pp. 46-48.
3. M. Mahmood, *The Political System of the Islamic Republic of Iran* (Delhi: Kalpaz Publications, 2006), p. 65.
4. Mohsen M. Milani, "The Evolution of the Iranian Presidency: From Bani Sadr to Rafsanjani," *British Journal of Middle Eastern Studies*, vol. 20, no. 1 1993, pp. 89-95.

economic policies while the Supreme Leader decides on matters relating to defence and foreign policy.[5]

The Constitutional Assemblies

Iran's political system includes powerful constitutional assemblies like the Council of Guardians and the Assembly of Experts. The Iranian Parliament which is called the Majlis has enjoyed considerable power since the death of Khomeini in 1989. The members of the Parliament are elected by the people from territorial constituencies. The term of a Parliament member lasts for four years and the current strength is fixed at 290.[6] The responsibilities of the Parliament include drafting legislation, ratifying international treaties, approving state-of-emergency declarations and loans, examining and approving the annual state budget and, finally, in case of necessity, removing from office the president and his appointed ministers.[7] The Council of Guardians consists of twelve jurists who determine the compatibility with the *sharia* (Islamic law) of laws passed by the Parliament. Six of the council's twelve members, whose term of office lasts six years, are Islamic jurisprudents appointed by the Supreme Leader. The remaining six are non-clerical jurists appointed by the Parliament at the recommendation of the head of the judiciary.[8] The Council of Guardians can interpret the Iranian Constitution and any such interpretation reached by three-fourths of the members assumes the same validity as the Constitution itself. The Constitution gives the council supreme oversight over all public referenda as well as over elections for the Parliament, the Assembly of Experts, and, as mentioned earlier, the presidency. After examining an individual's Islamic convictions and loyalty to the regime, the Council of Guardians decides whether parliamentary and presidential aspirants are qualified to run for office.

The Assembly of Experts, based in the city of Qom which is the largest Shia theological centre of Iran, consists of 86 clerics popularly elected to eight-year

---

5. Buchta, n. 2, p. 23.
6. Mahmood, n. 3, p. 67.
7. Buchta, n. 2, p. 58.
8. Mandana Naini, "Iran's Second Chamber? The Guardian Council," *The Journal of Legislative Studies*, vol. 12, no. 2 ,2006, pp. 200-202.

terms, who, in turn, elect the Supreme Leader from their own ranks. The assembly can remove the Supreme Leader if he becomes unable to fulfil his duties, if he loses one or more of the qualifications necessary to perform in his office, or if it is revealed that he never possessed these qualifications in the first place. A leadership council composed of the president, the head of the judiciary branch and an Islamic jurisprudent from the Council of Guardians would then assume the leader's duties until a new leader is elected. The Expediency Council was created by Khomeini to arbitrate in disputes between the Parliament and the Council of Guardians.[9] It also acts as an advisory body to the Supreme Leader.[10] The arbitration takes place in a situation where the Council of Guardians vetoes a Bill but the Parliament does not agree to it.

THE IRANIAN ARMED FORCES AND THE COMMAND AND CONTROL MECHANISM OF THE IRGC

The Iranian Armed Forces and Security Agencies

Besides the Regular Armed Forces, the main revolutionary armed security forces of the Islamic Republic of Iran are the Islamic Revolutionary Guards Corps (IRGC), which is called the *sepah-i-pasdaran* in Farsi, the Basij militia and the Law Enforcement Forces. The IRGC is also generally known as Pasdaran. The IRGC is politically more powerful than the Regular Armed Forces and the Basij militia is under the command of the IRGC. According to the Iranian Constitution, the main duty of the IRGC is the protection of the Iranian revolution and its ideals while it is the responsibility of the Regular Armed Forces to protect Iranian territory from external attack.

According to the Iranian Constitution, the main duty of the IRGC is the protection of the Iranian revolution and its ideals while it is the responsibility of the Regular Armed Forces to protect Iranian territory from external attack.

9. Buchta, n. 2, pp. 59-61.
10. Mahmood, n. 3, p. 79.

The Pasdaran's responsibilities include putting down internal opposition to the government. The Pasdaran's secondary function is defending against an external attack as it did during the Iran-Iraq War, besides its other functions like providing security in the border areas, including the war against drugs flowing from Pakistan and Afghanistan, deployment of relief forces for disaster operations during natural calamities like floods and earthquakes, and supporting pro-Iranian movements abroad.

The IRGC also has the task of fighting exiled militant opponents of the government. More importantly, the IRGC has been in charge of Iran's missile and weapons of mass destruction (WMD) programmes since the 1980s. The IRGC has developed a logistical infrastructure and has its own weapons procurement organisation independent of the regular military. The duty of the Basij is the maintenance of security in the urban areas. Besides these formal security agencies, there are various gangs called *ansar-e-hezbollah* or the "helpers of God" who act as the foot soldiers of extreme conservative elements in the ruling elite. They attack and intimidate critics and dissidents and usually go unpunished because of the bias of the judiciary which is dominated by the conservatives.[11] The main purpose behind the creation of the IRGC was to counter-balance the power of the Regular Iranian Armed Forces. The history of the IRGC's activities in Iranian politics will be dealt with in greater detail in a later section.

The Command and Control Mechanism of the IRGC

Though the Iranian Constitution gives the complete control over the armed forces to the Supreme Leader, he does not exercise this right through any direct chain of command. Today, the Supreme Council for National Security (SCNS), chaired by the president, is the main policy-making body with regard to national defence and security. The representatives of the Supreme Leader, the Regular Armed Forces which are called Artesh, the revolutionary guards and other security agencies are present in this council which discusses and formulates on national defence policy.

---

11. Wilfried Buchta, *Iran's Security Sector: An Overview*, Working Paper- No. 146 (Geneva: Geneva Centre for the Democratic Control of the Armed Forces, 2004), pp. 6-7.

The fact that the president chairs the SCNS does not mean that he is in charge of formulating defence and security policy. The Supreme Leader wields more clout in this institution through his representatives. During the 1998 Afghan crisis, the SCNS was responsible for formulating the response to the threat of the Taliban. The Supreme Leader is responsible for the overall formulation of defence policy and not the day-to-day management of defence related activities.

In spite of such formal structures, decision-making in Iran is achieved through consensus among the elites. Though such a system would appear to be complex, no actor would conduct important operations without the tacit approval of the senior leadership. Factors like family, kinship, educational affiliations and support from religious clerical personalities and factions influence military politics in the revolutionary guards. This phenomenon is less in the Regular Armed Forces where recruitment is done through conscription and where officers are trained in military academies.[12] In the period following the revolution, the revolutionary government created the Politico-Ideological Bureau (PIB) for the purpose of ensuring effective political control of the armed forces and its branches were introduced in all the sections of the army. The bureau's offices are supervised by religious clerics and their tasks included ensuring that the military conforms with the Islamic ideology and the Islamic indoctrination of the officer corps.[13]

> **In spite of formal structures, decision-making in Iran is achieved through consensus among the elites.**

THE IRANIAN ARMED FORCES AND IRANIAN POLITICS DURING THE KHOMEINI ERA (1979-1989)

The Origin and Development of the IRGC and its Functions

Before the Iranian revolution, the Iranian armed forces were the mainstay of the Shah. The Shah was able to maintain his control over the country with the

---

12. Daniel Byman, "Security Decision-making in Iran," in Daniel Byman *et al,* eds., *Iran's Security Policy in the Post-Revolutionary Era* (Santa Monica: RAND Corporation, 2001), pp. 24-26.
13. Mehran Kamrava, "Military Professionalization and Civil-Military Relations in the Middle East," *Political Science Quarterly*, vol. 115, no. 1, 2000, p. 83.

help of the armed forces and the intelligence agency, the SAVAK. In the build-up to the revolution, the underground revolutionary militias which belonged to leftists and religious groups had fought pitched battles with the Iranian armed forces. Because of this reason, the revolutionary government was suspicious of the loyalty of the Iranian Regular Armed Forces. They were seen as bastions of the monarchists who wished the return of the Pahlavis. In order to counter the influence of the Regular Armed Forces, the IRGC was created in accordance with a decree issued by Khomeini. The threat from the armed forces was not the only factor that prompted the authorities to create the IRGC. The Iranian revolutionaries saw their revolution as an alternative to Communism and capitalism and they wanted to spread their revolutionary ideals in the wider Islamic world and places where national liberation movements and revolutionary struggles were going on. The IRGC was a platform for "exporting the revolution" abroad. Even before their official formation, many of these revolutionary guards groups had existed as extensions of various originally underground revolutionary leftist and extremist Islamic organisations.

During the provisional government of Mehdi Bazargan (February-November 1979), these militiamen performed a variety of functions in support of the Islamic authorities, taking over mosques, police stations, prisons, government buildings, and army barracks and acting as agents for the revolutionary authorities. Iranian political organisations, including the Mujahideen-i-Khalq, Fedayeen, and Tudeh (Communist), powerful clerics, judges, Cabinet and Parliament members, and many other high-ranking civilian officials kept their own armed guards or *pasdars* as they are known in Farsi. Although remaining ultimately loyal to Ayatollah Khomeini, many of the revolutionary guards groups acted autonomously and recognised little authority beyond their immediate patrons, prompting Khomeini to create the IRGC keeping the dangers in mind of such fragmentation among Khomeini's immediate followers. By 1986, during the height of the Iran-Iraq War, the IRGC, or the Pasdaran numbered around 350,000.[14] The guards gained valuable

---

14. Nikola B. Schahgaldian, *The Iranian Military Under the Islamic Republic* (Santa Monica: RAND Corporation, 1987), pp.65-69.

military experience in 1979 when several thousands of them were dispatched from Tehran to fight against Kurdish rebels in Iranian Kurdistan.

In spite of the efforts of the authorities to professionalise the corps, clashes due to politicisation of the Pasdaran badly affected its solidarity. The multiplicity of power centres among the revolutionary guards compelled each rival group to increase its influence within the institution, in part by recruiting as many loyal people as they could. This pattern of recruitment became even more common after September 1980 when the need for mobilising more IRGC volunteers against the Iraqi forces became obvious. The Shia *mullahs* were also recruiting agents for the Pasdaran. Iranian social and family structures, particularly in some tribal and rural areas, made individual recruitment all but impossible. Entire extended families and clans would join the IRGC once their heads decided to enter the Pasdaran. Such a situation was not to the liking of many senior clerics who had all along pressed for a strong and united army loyal to their own religious and ideological beliefs. Although they had little power to influence local recruitment, a lot could be done once the recruits joined the IRGC. A programme of religious education was introduced in the corps.

Besides such activities, purges were conducted within the revolutionary guards. In late 1979 and early 1980 many leftists were thrown out of the organisation, followed by the Mujahideen and supporters of Bani Sadr in June-September of 1981. In March 1982, Khomeini banned IRGC members from getting involved in political matters and from becoming members of any political group or party, regardless of its ideology. Although such steps brought some internal organisational order and solidarity among the Pasdaran in the years after 1982, they it did not end the factional rivalry between Pasdaran units and commanders, nor did they prevent the IRGC from meddling in politics or being exploited by politicians. As it grew in numbers, the IRGC began to acquire a political weight of its own. It gained much influence when the clerics of the Islamic Republic Party (IRP) succeeded during the first half of 1980 in gaining the upper hand within the IRGC.

During Bani Sadr's presidency (January 1980-June 1981), it became the major responsibility of the Pasdaran to organise mobs against the president's

supporters in addition to fighting against the remaining anti-clerics opposition forces. Many public personalities competed with each other for gaining influence within the IRGC.[15] It was in this context that Khomeini banned the revolutionary guards from participating in politics. Pasdaran leaders were divided into various sub-groups, according to their political and ideological preferences. The publicly voiced opinions of Pasdaran leaders reflected the views of dominant clerical figures of the day, indicating that the Pasdaran was affected by the same political and ideological divisions that divided the ruling clerical establishment. Pasdaran factions appeared to consist of a smaller number of core members who had direct family and marriage ties with major Shia clerical figures.[16]

The IRGC's Domestic Activities

The Iranian revolution was brought about by a number of movements with different political orientations. Though Khomeini was the leader of the revolution, the anti-Shah forces included leftists and liberals. Each of these political movements wanted to rebuild Iran according to its respective viewpoint. This was a major obstacle to Khomeini's vision of an Islamic Republic in Iran. Among these movements, the radical leftists had the most powerful guerrilla organisations. Khomeini created the revolutionary guards to defend his government from possible attacks from his former allies. The new government also faced revolts from ethnic minorities like the Kurds. Khomeini needed his paramilitary organisation to enforce his Islamic doctrines in Iranian society. Because of these reasons, the duties of the Pasdaran were primarily internal in nature. The Pasdaran was established throughout. Iran, even in the most remote villages, and training centres were set up in the country's main towns so that reinforcements could be sent anywhere in the country at a moment's notice.[17] The IRGC had played an important role in crushing the Kurdish insurgency in Iran which began in 1979 and was led by the Kurdish Democratic Party in Iran (KDPI) headed by Abdul Rahman Ghassemlou.[18]

---

15. Schahgaldian, Ibid., pp. 69-73.
16. Ibid., p. 82.
17. *The Times of India* (New Delhi), September 29, 1979.
18. Edgar O' Balance, *The Gulf War* (London: Brassey's Defence Publishers, 1988), p.132.

One of the most powerful and organised opponents of Khomeini's regime was the leftist guerrilla organisation, the Mujahideen-i-Khalq. The Mujahideen and other leftist organisations were the most ardent supporters of President Bani Sadr. Bani Sadr and the IRP were bitter rivals. But as long as Bani Sadr was in the government, there was an uneasy peace between the Islamic authorities and the Mujahideen. The situation changed drastically with the ouster of Bani Sadr from the presidency. The crushing of a Mujahideen led protest march convinced the Mujahideen that the Pasdaran would show no mercy to Khomeini's opponents.[19] The Mujahideen-i-Khalq, allied to six smaller left-wing groups, declared war on the Islamic government and a series of major explosions occurred in Tehran in which there was huge loss of life and damage to property. The government fought back, using the Pasdaran on the streets, and by arrests, torture and execution without trial. The Pasdaran was responsible for locating and raiding safe houses inhabited by opposition guerrilla organisations. Throughout 1981-1982, the revolutionary guards and different Islamic committees suppressed several strikes in different parts of the country. They took the offensive by attacking striking workers, arresting some and dismissing others, and by completely suppressing protests by the workers.[20] The elimination of the Mujahideen and other leftist organisations from the Iranian political scene would not have been possible without the Pasdaran.

The Pasdaran also suppressed coup attempts by the Regular Armed Forces. Another prominent opposition movement to Khomeini's regime was led by Ayatollah Shariatmadari. The Muslim Republican Party (MPRP) led by Ayatollah Shariatmadari took control of the local television station in Tabriz in mid-December 1981 and expelled the governor general and other city officials. After negotiations, when Shariatmadari pledged that he would ask his followers to desist from further protests, he ordered his followers to disperse. The Pasdaran reoccupied the television station and government buildings. When the MPRP was forced to dissolve, its offices in Tabriz and other towns were occupied by the Pasdaran and other leftist armed group who were then allied with the regime. The Pasdaran was

19. Sepehr Zabih, *Iran Since the Revolution* (London: Croom Helm, 1982), pp. 104-105.
20. John Bulloch and Harvey Morris, *The Gulf War: Its Origins, History and Consequences* (London: Methuen London; 1989), p. 68.

responsible for keeping a tight control on Shariatmadari after the dissolution of the Party.[21] By 1983, the only major opposition force that remained was the Tudeh party. Though it was allied with the Khomeini regime, the revolutionary authorities feared that the Tudeh would take over with Soviet help after the death of Khomeini. So, by the end of 1982, the Iranian government decided to crush the Tudeh and any other party that was not Islamic. On April 27, 1983, the day some 500 Tudeh members were detained, all Tudeh members were ordered to identify themselves and report immediately to the nearest Pasdaran office.[22] After the crackdown on the Tudeh and the arrest and execution of prominent leaders like Nuredin Kianouri, the Tudeh was officially dissolved.

The Political Influence of the IRGC

Because of the nature of its duties, the Pasdaran had tremendous political influence in Iran. It was the policy of the government to frequently praise the Pasdaran in public sermons and on the national media.[23] Such a deliberate policy of the government translated into political power for the Pasdaran in practical terms. This fact became obvious to the first post-revolutionary government of Iran, headed by Mehdi Bazargan. Many requests were made by Prime Minister Bazargan for Khomeini's aid against these forces without result. Very soon, the Bazargan government was forced to face the reality that, in fact, it occupied the governmental offices only at the pleasure of the top level Khomeini supporters – Ayatollahs Beheshti and Montazeri, for example – who considered moderate politicians potentially dangerous. Behind these hardline leaders stood the student militias, the revolutionary guards, the revolutionary committees that ran the government, the revolutionary courts, and the Islamic Republican Party.[24]

> **Because of the nature of its duties, the Pasdaran had tremendous political influence in Iran.**

---

21. Zabih, n.19, pp. 77-78.
22. O' Balance, n.18, p. 130.
23. Nader Entessar, "The Military and Politics," in Hooshang Amirahmadi and Manoucher Parvin, eds., *Post Revolutionary Iran* (Boulder: Westview Press, 1988), p. 66.
24. Barry Rubin, *Paved with Good Intentions: The American Experience in Iran* (New York: Oxford University Press, 1980), pp. 291, 301.

The revolutionary, guards especially, were a source of friction between the Islamic Revolutionary Council and Mehdi Bazargan's government.

The power of the Pasdaran was also evident in the day-to-day life of revolutionary Iran. Prosecutor General Hojjatoislam Hossein Mussawi Tabrizi declared in 1981 that there would be street trials of arrested protestors at which the testimony of just two *pasdars* would be sufficient for death sentences to be carried out on the spot. Ayatollah Mohammadi Gilani, the chief judge of Tehran's revolutionary courts, declared that those who were wounded in the course of resisting arrest or attacking the Pasdaran should be shot on the spot.[25] The IRGC was given exceptional power to call upon manpower from all sectors for the war against Iraq.[26] The influence of the Pasdaran also became clear during elections to the Majlis in the spring of 1988. The bitterly disputed elections resulted in a virtual landslide for the conservatives and brought more than 140 new members into the Majlis, mainly young candidates who had come through revolutionary institutions such as the Pasdaran.[27] The rising influence of the Pasdaran did not escape the critical scrutiny of prominent Iranian leaders during the late 1980s when the revolution had become more stabilised. Ayatollah Montazeri, in a strongly worded letter to Prime Minister Mussavi, on October 1, 1988, criticised the revolutionary guards' intervention in commerce.

At the same time, the Pasdaran was hated by the upper classes for their excesses which included arbitrary searches and arrests and on the spot executions. Their excesses were such that even their Commander, Rezai, was obliged to admit that they tended to get involved in unwanted matters. The government did not stop such excesses of the Pasdaran.[28] The Pasdaran were idealised and pampered by the clerics throughout the country, especially in the cities. For example, they were allowed to carry arms everywhere they went, even on leave. Regular soldiers, away from the war front, were not allowed to carry arms under any circumstances.[29] The Iran-Iraq War also gave the Pasdaran the image of protectors of the nation. Various incidents exposed the Iranian public to

25. Zabih, n. 19, p. 205.
26. Shahram Chubin and Charles Tripp, *Iran and Iraq at War* (London: I.B. Tauris and Co. Ltd., 1988), p. 76.
27. Bullock and Morris, n. 20, p. 218.
28. Homa Omid, *Islam and the Post-Revolutionary State in Iran* (n.d., St. Martin's Press, 1994), pp. 106-109.
29. Chubin and Tripp, n. 26, pp. 186.

the role played by the IRGC on the warfront. Provisions for the Pasdaran were not included in the defence budget. As the Pasdaran had to acquire war provisions from the Iranian public, they became more popular among the public who became aware about their role in the war. This was in sharp contrast to the public perception of the Regular Armed Forces whose provisions were taken care of by the government itself.

THE IRGC'S ROLE IN POLITICS DURING THE RAFSANJANI AND KHATAMI PERIODS (1989-2005)

The Nature of Factional Politics in Iran

Before going into the post-Khomeini period in Iranian politics, it is necessary to realise the different political factions that came into being during this period and the reasons for their emergence. The German academician, Wilfried Buchta, has divided Iranian political factions into two broad divisions. These include the rightist and leftist factions. These two factions have further divisions within them. The major divisions between the leftists and the rightists and within them are based on their views regarding social and cultural issues. The main factions can, therefore, be described as the Islamic left, the traditionalist right and the modernist right. As mentioned earlier, the Iranian revolution was brought about by a combination of forces like the Communists and liberals and not just theocratic supporters of Khomeini. The ouster of President Bani Sadr from power signalled the victory of the pro-Khomeini forces in Iran.

The umbrella organisation for Iran's theocratic pro-Khomeini groups was the Islamic Republican Party (IRP) which was founded in 1979 by a number of clerical followers of Khomeini who included Rafsanjani and Khamenei. But divisions began to emerge between the IRP's left and right camps. The right camp consisted of religious traditionalists, socio-politically conservative clerics, and a number of religious technocrats, and it supported a pragmatic domestic and foreign policy oriented towards consolidation of what had already been attained. The left camp recruited from among social revolutionary, left-leaning Islamic clerics and religious laypersons. The members of this camp support a

state-controlled and egalitarian economic policy and the export of the revolution which for them are most important ideological goals of the revolution.

Khomeini was not able to prevent the split among his immediate followers and in June 1987, the IRP was dissolved. After this event, two political unions of clerics emerged. The union of the Islamic left is the Combatant Clerics Society and that of the traditionalist right is the Militant Clergy Association. In December 1998, a broad alliance of clerics, religious laypersons, Islam-oriented workers, and Islamic women's activists who supported the then Iranian President Mohammad Khatami formed a new and important sub-group inside the mainstream of the Islamic left, the Islamic Participation Party of Iran. Because of its openness to all reform-oriented forces, the Islamic Participation Party is referred to as the modern left. The prominent members of the traditionalist right Militant Clergy Association include Supreme Leader Khamenei. Some of the most influential members of the Militant Clergy Association are also members of the Council of Guardians and the Assembly of Experts, two powerful institutions in the Iranian political system. In principle, the Militant Clergy Association advocates private property ownership and private enterprise.

The modernist-right faction is far more liberal on social and cultural issues in comparison with the traditionalist right. This faction is grouped less around an organisation than the person of Hashemi Rafsanjani. The principle demand of the modernist-rightists, who declared themselves open to the policy of social and economic modernisation pursued by Rafsanjani when he was president, was increased efficiency in the country's economic development. The primary goal of the modernist right is to transform Iran into a modern state. Between 1980 and 1992, Islamic-left clerics and intellectuals held large parliamentary majorities. During this time, especially during the war years from 1980 to 1988, they supported a strict austerity policy and strict state control over the economy, charted a more restrictive course in social and cultural affairs, and supported the export of the revolution. When the Islamic left lost its parliamentary majority in the elections of 1992, it decided to withdraw for the time being from day-to-day politics. But even then, it retained a solid social base as well as links to certain sections of the Pasdaran.[30]

---

30. Buchta, n. 2, pp. 11-17.

The Rafsanjani Period

In a comparison between Hashemi Rafsanjani and Mohammad Khatami, the general impression is that Khatami did more to restrain the power of the IRGC than Rafsanjani. But Rafsanjani's actions after he became Iran's president give a different picture. In 1992, at Rafsanjani's request, Ayatollah Khamenei ordered that there should be one head for the Regular Armed Forces and the IRGC, to be called the chief of staff of the Armed Forces General Command. He named Hassan Firoozabadi, then deputy chief of staff of the Regular Armed Forces as the first chief of staff of the unified command.[31] This can be seen as an attempt by Rafsanjani to decrease the power of the revolutionary institutions perhaps because he saw them as a counterweight to his own influence. But Rafsanjani's effort in this direction was not destined to be successful, as similar attempts had failed in the past.

An effort to create a coordination mechanism between the Regular Armed Forces and the IRGC had begun in 1988 after some battlefield setbacks in the Iran-Iraq War when the first Joint Armed Forces General Staff was created. When Khamenei came to power, he began looking for supporters as his base of power was not strong. In an effort to win the support of the IRGC, he allowed the reestablishment of a separate IRGC Headquarters which undermined the earlier efforts to create a unified command of the armed forces.[32] Likewise, Rafsanjani's efforts did not lead to a declining of the power of the IRGC.

On the other hand, the IRGC and other security forces began to disobey orders, signalling that they were not always ready to follow the diktats of their political masters. During the riots in the city of Qazvin in 1994, the commanders of the IRGC garrison refused to shoot at the civilian population to restore order in the area. Ultimately, special IRGC units trained specifically in suppressing such unrest, named the "Ashura battalions", were brought in for the task.[33] Following this incident, four senior officers of the army, air force, IRGC and Law Enforcement Foundation (LEF) addressed a letter to the political leadership, warning it against deployment of the armed forces to crush civilian unrest or internal conflict, and

---

31. Dilip Hiro, *Neighbours, Not Friends: Iraq and Iran after the Gulf Wars* (London: Routledge, 2001), p.195.
32. Buchta, n.11, p. 10.
33. Buchta, n.2, p. 11.

The IRGC's involvement in Iranian politics increased during the two presidential terms of Khatami.

adding that the armed forces could no longer remain silent while Iran was threatened by external threat and internal disintegration.[34] Summing up the Rafsanjani period, the IRGC did not see the executive as a major threat to the rule of the clergy. Rafsanjani's objective was only the modernisation of the Iranian economy and not the liberalisation of the Iranian political system and society. Mohammad Khatami's government, on the other hand was seen by the IRGC as a grave threat to the stability of the system. Because of this reason, the IRGC's involvement in Iranian politics increased during the two presidential terms of Khatami.

The Khatami Period
Even during the 1997 presidential elections, uncertainty was caused by rumours that surfaced a few weeks prior to the vote, implying that the IRGC and the Basij would not tolerate the conservative candidate Nateq Nuri's electoral defeat. Such rumours motivated prominent Islamic-leftists Mehdi Karrubi and Mohammad Musavi Kuiniha to warn Khamenei that Khatami intended to withdraw his candidacy in protest against the unfair electoral conditions. Fearing damage to the image of the Islamic Republic, Khamenei gave in and, during the final phase of the campaign, reiterated his neutral stance.[35] During the polls, 73 percent of IRGC members voted for Khatami despite the fact that Mohsen Rezai, the commander of the IRGC, vocally supported Khatami's competitor which violated the IRGC's neutrality obligation. [36] This indicates that though the senior commanders of the IRGC were supportive of the traditionalist rightists, the IRGC rank and file included many supporters of the Islamic left. When Khatami became president, he tried to weaken the IRGC by successfully persuading the Supreme Leader to dismiss Mohsen Rezai, the commander of the IRGC since 1981 because of his activities during the elections. This step did not

---

34. Hiro, n. 31, p. 208.
35. Buchta, n.2, p. 33.
36. Michael Eisenstadt, "The Armed Forces of the Islamic Republic of Iran: An Assessment," *Middle East Review of International Affairs,* vol. 5, no. 1, 2001, p. 7.

bring about much structural change as Rezai's successor Yahya Rahim Safavi continued the policies of his predecessor.[37]

Khatami's efforts to decrease the influence of the armed forces were not just limited to the IRGC. In August 1998, at Khatami's request, Khamenei put the command of the LEF under Musavi Lari, the interior minister. Akin to the example of the IRGC, this step did not decrease the autonomy of the LEF or ensure greater accountability to the executive. Musavi Lari was unable to wield real *de facto* control over the LEF, as was proved when members of the LEF took part in numerous violent attacks on Khatami's partisans in the following months, and also in the bloody student unrest of July 1999. In December 1999, Musavi Lari publicly confessed his powerlessness when he said in a Press conference in Tehran that the officers in the LEF, who are loyal to the traditionalist right, do not obey his orders.[38]

One of the ways by which the exclusive political influence enjoyed by the IRGC among the Iranian armed forces could be decreased was by giving more autonomy to the Regular Armed Forces. Such an opportunity arrived during the 1998 tensions with the Taliban in Afghanistan. Recognising the fact that the expertise of the regular army would be needed in the event of a conflict, Khamenei created the position of the supreme commander of the Regular Armed Forces which technically put the regular army on the same level as the IRGC.[39] But in reality, only the ground forces are independent from the IRGC while the air force and the navy are under the command of IRGC officers.[40]

In this period, the IRGC showed signs that it was not only ready to disagree with the civilian authorities but also warn the government if it did not agree with state policies. During the July 1999 student protests, the IRGC viewed the reformist movement as a threat to the political system. Twenty-four commanders of the IRGC land, air and naval wings wrote an open letter to Khatami threatening to stage a military coup if he did not agree with their demand of supporting the crushing of the student protests.[41] This forced

---

37. Buchta, n. 11, p. 9.
38. Buchta, n. 2, p. 143.
39. Eisenstadt, n. 36, p. 6.
40. Buchta, n. 11, p. 11.
41. Kaveh Ehsani, "Do-e Khordad and the Spectre of Democracy," *Middle East Report*, no. 212,1999, p. 11.

Khatami to distance himself from the students which cost him politically.[42] There were further such warnings issued by the IRGC commanders. Threats were issued against Khatami and his supporters by Yahya Rahim Safavi, the commander of the IRGC. In late April 1998, in a confidential speech made before IRGC naval officers in Qom, Rahim Safavi castigated Khatami's liberal tendencies. The speech was widely noted and circulated as an audio tape. This attracted strong criticism from the Iranian domestic and expatriate Press. In spite of such reactions, Khamenei saw no reason to bring the IRGC commander to justice.[43]

One of the reasons for Khatami's inability to rein in the IRGC was the Parliament's lack of influence over the security forces. The Parliament under Khatami created several investigative committees to look into matters relating to illegal activities committed by members of the security forces. Despite the fact that the committees were not very effective, because of a biased judiciary, the very fact that such committees were formed for the first time in Iranian history can be seen as an important achievement.[44] The efforts by Khatami's followers also came to nought because of the support the traditional right provided to the IRGC through institutions dominated by them like the judiciary and the Council of Guardians.

The judiciary shut down a large number of pro-democracy newspapers, and arrested and put on trial a large number of journalists who were pro-Khatami. Even the Regular Armed Forces could not stress complete independence from the IRGC. Though the regular military numbers around 400,000 (versus the 120,000 men of the IRGC), it does not have the political influence of the latter. The IRGC has considerable influence on the professional development and advancement of future senior officers in the Regular Armed Forces. The IRGC has influence over the regular army through the Ministry of Defence whose current head is Admiral Ali Shamkhani, an IRGC officer, who is affiliated with the hardline faction of Iran's conservative leadership. Shamkhani, in an act of disloyalty, had run for

42. Hiro, n. 31, p. 246.
43. Buchta, n. 2, p. 143.
44. Buchta, n. 11. p. 20.

the presidency in 2001 against his own chief of Cabinet, President Khatami.[45]

Towards the end of Khatami's two terms as president of Iran, there were signs of the IRGC's glowing influence in Iran's domestic affairs, signalling that instead of a subdued IRGC's, Khatami's efforts had ended up emboldening the revolutionary armed force to play a more high profile role. Mahmud Ahmadinejad, a former IRGC commander had become the mayor of Tehran as a part of this trend. The IRGC encouraged its personnel to contest in the parliamentary elections of February 2004. A new right-wing faction called the Abadgaran-e Iran-e Islami (Developers of Islamic Iran) fielded a large number of candidates who had an IRGC or Basij background. This faction will be hereafter referred to as the Abadgaran and its background and ideology will be discussed in the section on Mahmud Ahmadinejad where it would become more relevant. The Abadgaran became the largest faction in the seventh Majlis. At least 90 members of the present Parliament are affiliated to the IRGC and other revolutionary organisations.

Towards the end of Khatami's two terms as president of Iran, there were signs of the IRGC's growing influence in Iran's domestic affairs.

In May 2004, a former IRGC Commander, Ezatollah Zargami, was appointed the head of Iranian radio and television.[46] In the same month, the revolutionary guards and the Basij forcibly prevented the opening of Tehran's airport, in a dispute over who would control the lucrative services as it is widely rumoured to be a route for highly profitable smuggling. This was not like a struggle between Khatami and the traditional right, but an IRGC challenge to civilian authority.[47] These attempts to increase its economic clout had begun from the 1990s itself. Since the 1990s, the IRGC has become involved in a number of economic and financial enterprises independent from the state. The reformist Parliament, which had raised the issue of 72 illegal jetties on Iran's border owned

---

45. Buchta, Ibid., p. 10.
46. Ibid., p. 23.
47. Patrick Clawson and Michael Rubin, *Eternal Iran: Continuity and Chaos* (New York: Palgrave Macmillan, 2005), p. 161.

by the IRGC, was not capable of stopping smuggling of goods through these jetties. It is estimated that annually US$ 9.5 billion worth of goods are smuggled through these jetties.[48]

AHMADINEJAD, THE ABADGARAN AND THE REVOLUTIONARY GUARDS

The Politics of the Abadgaran

Mahmud Ahmadinejad's victory in the 2005 Iranian presidential elections came as a total surprise as the widely influential Rafsanjani was expected to make a comeback. Ahmadinejad's victory can be seen as a part of the increasing influence of the IRGC in Iranian politics considering the character of the support base that voted for the Abadgaran faction whose candidate Ahmadinejad was. The Basij, who form a good number of Iranian voters, voted for Ahmadinejad because of his past history and the nature of his personality. He was considered to be morally upright in comparison to Rafsanjani who was seen as linked with massive corruption in the system. Ahmadinejad was a member of the "Special Forces Brigade" in the IRGC and had fought in the Iran-Iraq War. In order to understand the true nature of the Abadgaran faction, it is important to make an addition to the model provided by Wilfried Buchta and mentioned earlier in this work. Walter Posch has added the "neo-conservatives" into the group of factions that make up the broad rightist faction. The Iranian neo-conservatives had in the beginning tried to organise themselves as a new radical leftist-fundamentalist organisation. Mohammad Mohammadi Reyshahri was the founder of the new organisation which was named the "Society for the Defence of the Values of the Islamic Revolution" and was politically opposed to the Islamic left which was still radical.

This new movement was directed against the then President Rafsanjani. It had strong links with extremist vigilant groups like Masud Dehnamaki's *ansar-e-hezbollah*, that, in turn, was closely connected to the Basij and elements in the Pasdaran and the Intelligence Ministry. Reyshari's attempt to win the presidency

---

48. Buchta, n. 11, p. 24.

in 1997 failed and he disbanded the organisation in 1998. This political option, however, remained on the margins of the political spectrum with big appeal amongst the Basij and the increasingly frustrated war-generation who saw themselves betrayed and denied the benefits of the revolution they had fought for. Abadgaran is the party that now functions as the new political outlet of the neo-conservatives. It is believed to have ties with extremists. The victory of Ahmadinejad can be seen as the outcome of a generation change among the traditional conservatives. Faced with Khatami's victory in the 1997 presidential elections and the loss of majority for the traditional rightists in the parliamentary elections in 2000, the younger generation of conservatives under the leadership of the Society of Islamic Engineers, of whom Ahmadinejad is a member, changed the message of the traditionalist rightists and accepted a more modern outlook.

The older generation of rightists helped the Abadgaran to come to power in the parliamentary elections of 2004 by preventing most reformist candidates from taking part in the elections. But, ultimately, it was the efforts of younger politicians like Mohammad Reza Bahonar, who was the president of the Islamic Engineers, which fetched victory for the Abadgaran. It was obvious that the neo-conservatives had set their eyes on the presidency in 2005. Ahmadinejad's appointment as mayor in Tehran appeared to be an attempt in this direction.[49] While the Abadgaran are ideologically hardcore and are from revolutionary guard backgrounds, they are not willing to accept the leadership of the older and clerical traditionalist rightists. [50]

The Declining Popularity of Ahmadinejad

While the emergence of Ahmadinejad looked promising for the future of the revolutionary guards and the Basij in Iranian politics, his actions and declining domestic support has diminished such prospects. In the first few months of power, Ahmadinejad adopted a hardline stance on issues like the nuclear programme and Israel. This has brought Iran into a confrontationist position with the US and the European Union which is not liked by the rightists,

---

49. Walter Posch, *Islamist Neo-Cons Take Power in Iran,* Occasional Paper No. 3 (Ljubljana Institute for Security Studies, 2005), pp. 2-6.
50. Clawson and Rubin, n. 47, p. 161.

What has raised the domestic irk towards Ahmadinejad is his lacklustre performance on the economic front.

including Ahmadinejad's own allies. But what has raised the domestic irk towards Ahmadinejad is his lacklustre performance on the economic, front. As he had come to power on the promise of shoring up Iran's economy and improving the living standards of the poor, the declining condition of the Iranian economy in spite of rising oil prices, affected his popularity. The economy is bedevilled by rising inflation, unemployment and rising prices in the housing sector. His policy of pumping petrodollars into the economy has only increased the deficit. These factors negatively affected the performance of the Abadgaran during the simultaneous elections for the Assembly of Experts and the municipal councils. The revolutionary guards and the Basij stayed away from the campaigning.[51] This has given added confidence to rivals like Rafsanjani to attack Ahmadinejad's policies publicly in spite of Khamenei's support to him.[52] Recently, the Majlis rejected three of Ahmadinejad's nominees for the post of oil minister, indicating that his former allies have begun withdrawing their support for him.[53] All these indicators point to the fact that there are less chances of Ahmadinejad getting elected for a second term. But what does the future hold in store for the IRGC with regard to its role in Iranian politics?

THE IRGC AND THE FUTURE OF THE ISLAMIC REPUBLIC
As has been already stated, the primary duty of the IRGC has been the protection of the Islamic Republic and its values and exporting these values to the wider Islamic world. These responsibilities of the IRGC are mainly of a political nature rather than a military one. This denotes that the IRGC is a predominantly political organisation which cannot be prevented from involvement in domestic politics. This does not naturally mean that the IRGC is bereft of its military responsibilities or will not fight an external invasion in the way it did during the

51. H. Graham Underwood and Ali Afshari, "Iran's Post-Election Balance," downloaded from http://www.opendemocracy.net/democracy-irandemocracy/iran_election_4268.jsp on, June 12, 2007.
52. http://news.bbc.co.uk/2/hi/middle_east/6290101.stm.
53. http://news.bbc.co.uk/2/hi/middle_east/4462774.stm.

Iran-Iraq War. But the reality is that the IRGC is far changed from the times when it was a mere interest group, and is today an active player in Iranian politics. The loss of influence of either Ahmadinejad or the Abadgaran cannot be seen as sounding the death knell of the IRGC's political future. Since the nature of Iranian politics is very fluid, with individuals

The IRGC is a predominantly political organisation which cannot be prevented from involvement in domestic politics.

and institutions having links across the different political factions, an organisation like the IRGC can easily adapt according to changing circumstances and forge links with new political factions. At the same time, the Abadgaran cannot be completely written off as it is already distancing itself from the personality of Ahmadinejad.

This brings us to the question of whether the IRGC can be seen as a politically monolithic organisation. There are political differences within the IRGC itself. While the senior commanders are predominantly supporters of the traditionalist right, a good number of the rank and file were sympathisers of the Islamic left. One of the major reasons why the support of the IRGC personnel shifted to the Abadgaran was the increasing moderation in foreign policy by Khatami. These rank and file voters of the IRGC are increasingly being seen as an important voting bloc which can be a determining factor in Iranian politics. The general impression about Iran's politics in international media sources is that Iranian politicians who are conservative in social and cultural issues would also be supporters of spreading the Islamic revolution abroad. But the reality is just the opposite. While the traditional rightists are socially and culturally conservative, they do not support the spread of the revolutionary ideals beyond Iran's borders. While the Islamic left were firm supporters of spreading the revolution, they were not as conservative as the rightists on social and cultural issues. The Abadgaran chose to combine elements from both sides and while it believes in reinforcing the social and cultural norms of the revolution, it also has a radical foreign policy. The victory of the Abadgaran can also be seen as a part of the power struggle within the rightist faction. While revolutionary institutions like

the IRGC whose members were predominantly from the lower and lower-middle classes were responsible for securing the stability of the Islamic Republic, political power was enjoyed mostly by the clerics. Ahmadinejad's victory can be seen as an outcome of efforts by former revolutionaries to bring power into the hands of the rightful inheritors of the revolution.

How has the Islamic Republic of Iran survived for 18 years after the death of Khomeini? The Iranian political system has been designed in such a manner that the office of the Supreme Leader is not affected by the disaffection of the Iranian population towards the president and his Cabinet. It is the sole responsibility of the president to introduce a manifesto and make sure that at least some of the proposals are implemented, while the Supreme Leader has to merely maintain the status quo. Things are made much more difficult in a situation where the president does not have the mandate to restructure the political system. The post of the president has been occupied by politicians from different political factions, including the modernist right, the Islamic left and the neo-conservatives. Such a situation bodes ill for the future of the Iranian state in the long run though there is no sign of trouble in the near term. Once it is realised by the majority of the Iranian population that the political system cannot be changed by democratic norms, pro-democracy opposition and dissident movements can develop outside the political system unlike the pattern that was seen since the death of Khomeini. A far as the IRGC is concerned, it would try to get former revolutionary guards and pro-IRGC clerics admitted into powerful institutions like the Council of Guardians and the Assembly of Experts rather than just focus on winning presidential and parliamentary elections. The political interests of the IRGC have been always served by keeping close links with the Supreme Leader.

It can be said that civil-military relations as such began in Iran during the

> **The Iranian political system has been designed in such a manner that the office of the Supreme Leader is not affected by the disaffection of the Iranian population towards the president and his Cabinet.**

1920s when Reza Shah began to develop a powerful and modernised army. Until then, the monarchy had depended upon feudal and tribal chiefs to provide soldiers during times of war or revolt. In comparison with the military dictatorships in the Arab states, the military in Iran has always been subordinate to civilian rule. Such a situation prevailed in the Arab states like Egypt, Syria and Iraq because of the colonial legacy which created efficient bureaucracies and armed forces but no strong political movements. Iran had developed a strong political culture since the early 20th century which set it out on a political course different from that of the neighbouring states.

In comparison with the military dictatorships in the Arab states, the military in Iran has always been subordinate to civilian rule.

CONCLUSION

Today, the stability of the Islamic Republic does not depend on the personality of one individual as it did during the time of Ayatollah Khomeini. It is often hinted that Rafsanjani is bound to replace Khamenei as the Supreme Leader. But the stability of the republic is bound to hinge on alliances between institutions like the IRGC, which have a vital stake in the preservation of the system. Any democratic government that comes to power with complete authority is bound to dismantle revolutionary institutions like the IRGC. Therefore, it can be expected that the IRGC would be in the forefront of a struggle against pro-democracy forces. The IRGC, whether its senior commanders or the normal troops, is likely to support an aggressive foreign policy though it would not prefer hardline rhetoric of the type advocated by Ahmadinejad as it could have negative political consequences. The IRGC would, instead, prefer an external attack without any outright provocation by Iran as that could boost its popularity and support within the country. At the present moment, the IRGC's political influence shows no sign of diminishing.

RUSSIA'S AIR DEFENCE STRATEGY

ATUL KUMAR SINGH

The air defence organisation of the Soviet Union was heavily influenced by the events of World War II, where it was on the defensive against the German air offensive owing to a lack of credible air defence and quality fighter aircraft. Anti-aircraft artillery which was the core of Soviet air defence, was ineffective against high altitude Luftwaffe air attacks. Post-World War II, the Soviet Air Force and air defence forces evolved with the defensive mindset and the main task for the air force was to support ground forces; consequently, the aircraft produced were also of tactical nature, with limited radius of action. The increasing threat from US strategic offensive forces and the nuclear missile threat compelled the Soviet Union to develop a vast and very dense network of air defence radars, early warning systems, a variety of surface-to-air missiles (SAMs) produced at rapid pace and large numbers of fighter aircraft, starting with the MiG-15 in the early Fifties. Throughout the Fifties and Sixties, the Soviet Union continued to build on its air defence forces (PVO) and during the late Sixties and mid-Seventies, it was the second largest independent Service of the Soviet armed forces. The air defence-centric Soviet military doctrine and resultant density of deployment of air defence weapons is aptly explained by Air Commodore Jasjit when he argues that "....the Warsaw Pact air defence system for a 600-odd km frontage is believed to have cost in excess of $ 120 billion; and it incorporates (according to the US Secretary of Defence) 'over 4,600 tactical SAM (surface-to-air missile) launchers and 12,000 AAA (anti-

Wing Commander **Atul Kumar Singh** VSM, is a Research Fellow at the Centre for Air Power Studies, New Delhi.

aircraft artillery) pieces' besides the 25,000 shoulder fired launchers at tactical level alone and the 5,000 odd fighters to protect frontage equivalent roughly to the Kashmir-Punjab segment of the Indo-Pak border."[1]

At the time of Soviet disintegration in December 1991, the Soviet Union had a quantitatively formidable air defence network, though qualitatively it was inferior to Western systems. Russia inherited a crippled air defence organisation because 30-40 percent of the Soviet air defence infrastructure was buried under the debris of the collapsed Soviet Union, and there were many areas of defence industry where Russia had to start from scratch. In addition to the resource handicap, the Russian armed forces were also beset with many socio-economic problems that retarded the development of the air force and air defence forces until 1997-98 when the process of reforms started gaining some momentum.

In the first decade of the 21st century, the Russian Air Force is well on its way to modernisation. An improved economy, increasing defence budget and the geo-strategic environment played a vital role in shaping the new Russian military doctrine in the year 2000, which emphasis on modernisation and acquisition of strategic offensive and defensive capabilities. There is also a renewed emphasis on an assertive nuclear policy.

The Russian military leadership has deliberated over the strategic role of air power in the 1991 Gulf War, Kosovo Operations and Iraq War and there is an understanding of independent strategic functions of a conventional air force in future wars and conflicts. This understanding is determining the organisational restructuring of the Russian Air Force (VVS) and planning of the Strategic Air Defence Forces (PVO) for the Russian Federation. The air defence doctrine of Russia had transited from point defence to area defence and once again back to point defence (mainly because of constraints of resources). In spite of a very turbulent decade of disarray, post-Soviet disintegration, today the Russian Air Force has a formidable air defence infrastructure, in terms of aircraft, SAMs, AAA, communications, electronic warfare and restructured organisation. However, there are still many issues such as upgrade/modernisation of interceptor aircraft, antiquated radar and early warning systems, lack of flying and ground training,

---

1. Air Commodore Jasjit Singh, *AWACS the New Destabiliser* (New Delhi: Lancer International,1987) ,p.67.

technological lag, automated command and control systems and, ultimately, the ability to compete and meet the capabilities of its immediate Western adversaries.

In the light of the changing global perspectives on application of force through aerospace power and the consequent shift in military strategies of leading air forces to concentrate on offensive capabilities, the significance of air defence has enhanced, firstly, to increase the survivability of own offensive assets, and, secondly, the precision stand-off weapons and ballistic missile threat has added to the complexity of air defence of strategic assets. The objective of this paper is to study the evolution of Russia's air defence strategy in the context of its overall military doctrine, effects of the disintegration of the Soviet Union, impact of recent wars on the military doctrine and the emerging air defence strategy in the context of the overall Russian aerospace strategy for the 21st century.

RUSSIA'S MILITARY DOCTRINE

The Russian military doctrine of 1993 was amended and approved by President Vladimir Putin on April 21, 2000. The military doctrine, clearly spells out the Russian threat perception, externally from the North Atlantic Treaty Organisation (NATO) countries and the USA and internal threats from secessionist forces similar to Chechnya. The doctrine lists the types of military conflicts that Russian forces are likely to be involved in, and emphasises the use of military forces in quelling internal conflicts and for international commitments like peace-keeping operations. Emphasising the use of nuclear weapons, Russia's military doctrine states, "The Russian Federation reserves the right to use the nuclear weapons in response to the use of nuclear and other mass destruction weapons against Russia and its allies – as well as in response to a large scale conventional aggression in critical situations for Russia and its allies." Both Russian and Western strategic analysts believe that Russia's traditional conventional military superiority, vis-à-vis NATO, the USA and Japan has declined in terms of both qualitative and quantitative aspects relating to the military balance. Therefore, Russia is now aggressively posturing and adopting a strategic concept of nuclear first use in order to compensate for the weaknesses in conventional military forces. The main pillars of the new Russian military

doctrine are nuclear deterrence, nuclear first use, robust conventional defence, and military role in conventional conflicts.[2] Russia is deliberating on the draft of a new military doctrine prepared by the Defence Ministry expert group in 2006. It is reported that the new military doctrine would be the permanent military doctrine of a democratic state. The proposed doctrine visualises the threat for Russia emerging from the USA, NATO and international terrorism.[3]

POST-SOVIET RUSSIAN AIR DOCTRINE

In a traditional Soviet military doctrine, air power was subordinated in a secondary role as a supporting element in the combined arms approach. The complex problems following the break-up of the Soviet Union and the impact of the Gulf War and NATO operations in Kosovo almost overnight changed the thinking of Russian military experts and their stress shifted to regional power projection which was the greatest strength of the VVS. Alexei G. Arbatov, in an analysis of the VVS, articulates the VVS thinking, "The success of ground operations increasingly depends upon air force missions, from achieving air supremacy to until the moment the enemy surrenders."[4] Seconding the analysis of A.G. Arbatov, Gen. Deinekin, commander- in-chief of the Russian VVS in 1992, had said that "the main goal of VVS restructuring through the year 2000 will be to create from existing formations, a separate

The VVS had a decisive role in winning strategic air supremacy.

highly mobile branch of armed forces featuring an appropriate mix of personnel, platforms and weapons able to perform the full spectrum of combat missions either jointly or independently." Gen. Deinekin later elaborated that the VVS had a decisive role in:

- Winning strategic air supremacy.
- Weakening the enemy's military-economic potential.
- Disorganising his state and military command and control.

2. Alexei G Arbatov, "The Transformation of Russian Military Doctrine: Lessons Learned from Kosovo & Chechnya's." (analysis of Russian military doctrine) Available on http://www.marshallcenter.org accessed on July 25, 2007.
3. "Russia's New Military Doctrine Declares USA & NATO as Key Potential Enemies," Pravda, available on http:// english.pravda.ru/print/russia/kremlin/84521-Russia_doctrine, accessed on July 25, 2007.
4. Benjamin S. Lambeth, *Russia's Air Power at the Crossroads* (Santa Monica: RAND Corporation 1996). p.67.

- Engaging strategic and operational reserves.
- Providing air support to large strategic formations of the ground troops and naval forces.

Notwithstanding the objectives of Gen. Deinekin and the dismal working conditions of the VVS throughout the Nineties, VVS Commander-in-Chief Gen. Kurnokov described in 2001, the tasks of the VVS in the 21st century as follows:[5]

- Repelling first surprise air attack preceding land and naval invasion...
- Inflicting a defeat on the main forces of the aerospace adversary by coordinated actions of defence forces engaging aerospace offensive weapons in flight...and attacking forces throughout their basing system.
- Providing air support and air cover for the armed forces land units and assisting them to seize the initiative.
- Providing air support and air cover for joint actions by the armed forces and other troops of the Russian Federation.
- Participating in peace-keeping operations outside the Russian Federation.

The main difference between the VVS tasks expressed by Deinkin and Kurnokov is that while Deinkin emphasised on achieving strategic air supremacy, Kunokov has been more cautious, considering the lack of strategic offensive capability, and emphasises upon defending the first wave of aerial and naval invasion of an "aerospace adversary," hinting at the importance of aerospace defence (ballistic missile defence – BMD).

HISTORICAL BACKGROUND

At the end of the World War II (1939-1945), the Soviet air defence system was based entirely on visual observation and, to some extent, on sound detectors. The lack of early warning radars and communication network was perhaps the most striking weakness of the Soviet Air Force. Absence of a reliable air defence organisation was apparent during Operation Barbarossa when the Luftwaffe

---

5. Stéphane Lefebvre, "The Reforms of the Russian Air Force" in Anne C. Addis and Roger N. Mcdermott, eds., *Russian Military Reforms* (London: Frank Cass, 2003) pp.144-145.

bombers made unhindered and devastating air attacks on Soviet airfields and other targets before Soviet fighters and anti-aircraft could be brought in. The strongest part of the Soviet air defence in World War II was its artillery arm but this was used primarily in tactical ground battles as anti-tank or mass artillery support for ground forces. Similarly, only one fighter air division with an estimated strength of 250-300 fighters was assigned to the continental air defence of the USSR. By the end of World War II, in the autumn of 1945, the Soviet military leadership realised that a radically new approach to air defence was required.[6]

The Russian Army's doctrinal belief of integral air defence through AAA was the result of the near loss of the air war against the smaller Finnish Air Force in 1939-40 and its recovery from the brink of defeat against Luftwaffe air attacks between 1941- 43. The Soviet fortunes were reversed because the Germans had to divert one-third of their air force on the western front and the number and quality of aircraft with Soviet forces increased with the help of the USA and indigenous production. Experiences such as these led to the formation of air defence forces as a separate Service. "The fundamental doctrinal differences between the USA and USSR strategy could be apportioned to such experiences of Soviet forces, whereas the USA Army, barring once at Kasserine Pass in 1943, was never subjected to hostile air attacks."[7]

Post-World War II

The lesson from World War II for the USSR was clearly to lay greater emphasis on strategic air defence and device a long-term plan to strengthen fighter and gun defences against atomic air attacks through long range strategic bombers. The first step was to establish an efficient early warning radar system, a prerequisite for coordinated air defence by fighters, guns and missiles. The post-War Soviet strategic air defence plans were

> **The lesson from World War II for the USSR was clearly to lay greater emphasis on strategic air defence.**

6. Asher Lee, *Soviet Air Force* (London: Gerald Duckworth, 1961), pp.109-113.
7. Air Vice Marshal A. K. Tiwary, *Aerospace Defence: A Holistic Appraisal* (New Delhi: Manas Publications, 2006), pp. 33-34.

accelerated by the large numbers of captured electronic equipment and early warning radars like the Freya and Wurzburg, produced and operated in East Germany and Poland, which could not be destroyed or evacuated during the final retreat of the Germans. On similar lines, hundreds of Luftwaffe radar personnel who had manned the German early warning systems and were prisoners of war, were transferred to train Soviet Air Signals units in Leningrad, Kiev, Riga, Moscow and Tashkent. In addition, hundreds of German radar engineers with production and maintenance experience at the German electronic firms Siemens, Askania and Telefunken, helped the Soviets to set up skeleton early warning systems from East Baltic to Eastern and Central Europe as early as end 1946.[8]

The main thrust of the Soviet strategic air defence was marked by progress in the development of jet fighters. In 1944, the Soviet High Command created a special fighter command in the PVO organisation, which is referred to in Soviet air documents as IA-PVO [*Istrebitel Aviatsia-*(Fighter Aviation) *Protivo-Vozdushnaya Oborona* (Anti-Aircraft Defence)]. The first two Soviet post-War jet fighters the MiG-9 and the YAK-15 were test flown by April 1946. To catch up with the Western technologies of that time, the USSR bought 25 Rolls-Royce Nene and 30 Rolls-Royce Derwent turbo-jets from Great Britain. These engines advanced the development of aircraft like the MiG-15, MiG-17 and YAK-23. At the outbreak of the Korean War in June 1950, the Soviet air defence fighter arm of over 2,000 aircraft was equipped with MiG-15 aircraft. The Korean War provided the test bench for Soviet-made radar equipment manned by Soviet signals personnel. The MiG-15 jet fighters were controlled and guided by early warning radars supplied by the Soviets. The Korean War showed that the Soviets had adapted well to German early warning systems; however, there were delays in the development of airborne radars, air-to-air and surface-to-air missiles.[9]

By the end of 1950, the Soviet artillery arm of the PVO had been substantially strengthened by hundreds of radar controlled heavy anti-aircraft guns of up to 120 mm calibre. The early warning radar screens in Eastern and Central Europe, over the Baltic, the Arctic and the Far Eastern maritime provinces were being

---

8. Lee, n.6 p.115.
9. Lee, Ibid., pp. 116-118.

gradually extended and improved. The major deficiency of an airborne radar and radar gunsight in the MiG-15 aircraft was also remedied by the end of the Korean War, when the Soviets tested their first all weather jet fighter, the subsonic YAK-25. This aircraft was inducted into the day and night air defence regiments of the PVO Command in 1955. On the other hand, the MiG-17 started replacing the MiG-15 in 1953 and equipped both strategic and tactical Soviet air regiments and units of the Soviet Navy. The first supersonic MiG-19 began to equip PVO fighter regiments in 1955-56.[10]

Birth of PVO (Protivo-Vozdushnaya Oborona)

From those beginnings has followed the construction of the modern Soviet air defence systems. In 1948, command of the troops for National Air Defence was removed from the Soviet Army artillery.[11] The experiences between 1939 to 1941 against Finland and Germany led the Soviet military leadership to understand the requirement of national air defence, thus, separating the air defence elements from the army, and establishing a national air defence force (PVO) separate from the Soviet Air Force (VVS). The strategic air defence operations in order of priority, included:

- Protecting administrative-political, military-industrial and communication centres.
- Providing cover to air bases, missile troops and major headquarters.
- Defending concentrations and deployment of major ground forces groupings and second echelon of reserves.

The PVO was designed to intercept United States Strategic Command bombers as they penetrated the Soviet air space in the Cold War period. The three main branches of the PVO were fighter interceptor units, radio technical troops and surface-to-air missile formations. A network of early warning and ground control intercept (GCI) radars, anti-aircraft defences and interceptor bases with communication links were constructed.[12] From the mid-1960s however, anti-

---

10. Ibid., pp. 118-120.
11. Air Vice Marshal R. A. Mason, "The Contribution of Air Power to Soviet Strategic Objectives" in Col. Carl W. Reddel, ed., *Transformation in Russian and Soviet Military History (*Washington DC: USAF Department of History 1990), p.282.
12. Mason, Ibid., p.283.

rocket defence (PRO) and anti-space defence (PKO) started gaining strength, eventually leading to the Russian Space Forces. The era of the MiG-15 was followed by that of the MiG-21 and SAMs. The impact of the destruction of Gary Power's U-2 in 1960 exposed the vulnerability of high altitude manned aircraft to SAMs, which led to low level attack profiles. Further development of the Foxbat family, later versions of SAMs, improved radars and, ultimately, the entry of the Il-76 Mainstay airborne warning and control system (AWACS) have brought home the achievements of strategic air defence. The US upgrade programme of the B-52, the extensive resource investment in the B-1 and B-2 programme and the US allocation of high priority to stealth technology were the responses to the comprehensive air defence network of the Soviet Union.[13]

FROM SOVIET TO RUSSIAN AIR FORCE

Prior to the dissolution of the Soviet Union, the air defence force (PVO) was the second largest independent Service of the Soviet armed forces, and it consumed a major share of the military's annual resource allocation. Since the 1983 shooting of the civilian KAL-007 airliner and the 1987 landing of Mathias Rust in a Cessna at Red Square, the PVO was under constant scrutiny for the effectiveness of its roles and missions. By 1991, the PVO was in the process of redefining its missions. However, after the collapse of the Soviet Union, the senior leadership of the PVO was replaced and the robust air defence organisation of the Soviet Union was severely degraded.[14] The collapse of the Soviet Union posed an immediate challenge to the air defence of the former USSR's territorial space, owing to the loss of forward bases, early warning radars, large numbers of fighter aircraft, poor economic conditions and, most importantly, the loss of strategic depth provided by the East European countries and the seceding regimes of western/southern USSR.

The first major change was the rapid reduction in force levels: the air force potential dropped from 20,000 pilots and 13,000 aircraft to 13,000 pilots and 5,000 aircraft. Russia lost mainly to Ukraine and Belarus about 37 percent of the former

13. Ibid., p.283.
14. Linda Hor Vlahos, Micheal J. Deane, Marc J. Berkowitz, "Aerospace Defence Requirements in Post- Soviet Russia,"*Comparative Strategy,* vol 11, 1992, pp. 431-445.

Soviet Air Force MiG-29s, 23 percent of the Su-27 fighters and about half of its 40 IL-78 refuelling tankers, 43 percent of about 500 IL-76 transport, most of its Tu-95s and all but two operational Tu-160 strategic bombers. Russia also lost its forward air bases and air surveillance systems in East Europe and Baltic countries, and all of a sudden, it had several new neighbours right on its borders. Russia's air base network was reduced to 50 per cent as compared to that of the former Soviet Union. The contractual commitments of the Conventional Forces in Europe (CFE) Treaty signed in November 1990 and the Tashkent Treaty of May 1992 reduced the strength of aircraft with Russia to 3,450. (The CFE Treaty was suspended by Russia on July 17, 2007.) The air force units equipped with the best and modern aircraft fleets were transferred from East Germany and Poland to the areas of St. Petersburg, Moscow and Northern Caucasus.[15]

The Commander-in-Chief of the VPVO, Col. Gen. Victor Prudnikov favoured a common air defence for the Commonwealth of Independent States (CIS), because the disintegration would mean the loss of forward radar cover of 800 to 1,000 km and scattered disposition of VPVO interceptors and SAMs[16] would also require considerable expenditure towards developing a parallel command structures. Post-Soviet Union, only 70 percent of the VPVO's original assets remained on Russian soil and it became increasingly difficult to maintain the integrity of Russian air defence at an acceptable level. Despite lip-service from the other republics for an integrated surveillance and monitoring system, the same republics declined to recognise the operational control of Marshal Shapasnikov's CIS joint command. States like Ukraine that received a large portion of Soviet air defence assets, including some of the radar production centres, demanded that the VPVO assets on Ukrainian soil be handed over for their own sovereign air defence. On the break-up of the USSR, the result was an overnight disappearance of what Marshal Shapasnikov called a "single military strategic area" developed over a 70-year span of Soviet history.[17]

The air defence forces also found it difficult to maintain a high state of

15. Russian Air Force, "Period of Transition" available at www.sci.fi/~fta/russia2.htm accessed on February 25, 2007.
16. Lambeth, n.4 p.20.
17. Lambeth, Ibid., p.22.

readiness. In February 1996, the Commander-in-Chief, Gen. Viktor Prudnikov, admitted that inadequate funding and poor material and technical support had lowered the standard of combat readiness of his branch. Russia's missile forces receive no systematic daily training, and there is no firing-range practice. Air defence pilots get little flight time, and no funds are available for maintenance or aircraft parts. As of 1996, the air defence forces had not received funds for new orders for two years, and no improvement was expected in the near future.[18] Post-9/11 attacks on the USA, it was reported in the Russian media that what happened in New York could have easily happened in Moscow. In December 2001, the commander of the VVS radio technical troops, Lt. Gen. Aleksandr Shramchenko, admitted that since the reforms had started, 50 per cent of the troops' capabilities to monitor Russia's air space had been lost. "In fact, we do not control the air space from the Ural Mountains to Kurile Islands."[19]

IMPACT OF GULF WAR AND KOSOVO OPERATIONS

The disintegration of the Soviet Union came immediately after the Gulf War and Soviet leaders observed the dominating role of air power during the war. The Soviet, and later, Russian military leadership used the example of the Gulf War and the stunning ability of Coalition forces to seize, maintain and exploit control of the air to project the Western air threat for Russia's air defence. In February 1991, Minister of Defence Yazov said, "What happened in Kuwait and Iraq necessitates a review of the attitude towards the army air defence and the country's entire air defence system..... When we ask ourselves, did it work in Iraq, we have to answer, mostly it did not."[20] The success of Operation Desert Storm provided three sobering conclusions for the future of the Russian air defence: [21]

- The Soviet supplied air defence systems to Iraq were either easily suppressed or easily avoided by Coalition forces.
- The Coalition achievement of air superiority within hours of the conflict's onset virtually decided the outcome of the war.

18. "Russia: Troop Support Elements," available on www.russiansabroad.com accessed on Jun 13, 2006
19. Lefebvre, n.5, p.154.
20. Hor Vlahos *et al,* n. 14, p.436.
21. Hor Vlahos *et al,*Ibid.

- With the use of advanced conventional munitions, strategic objectives could be achieved by air power alone, either through massed strikes or highly selective "pinpoint" strikes against key targets.

In short, the Soviets found that their air defence systems proved to be woefully ineffective against technologically sophisticated weapon systems. The Soviet military leadership also visualised the changing nature of war where the foundation to achieve strategic objectives could be laid by the persistent use of air power and invasion by ground forces was no longer the

The primary contingency for military planning would be the "aerospace war."

main thrust of war. Gen. Maj. V. I. Slipchenko, chief of the scientific research section discussed the Soviet military views of the lessons of Desert Storm and concluded that the primary contingency for military

planning would be the "aerospace war." The other implications drawn by the Soviet military leadership were:[22]

- Need for adoption of the ''point defence'' system capable of defending specific targets but with sufficient mobility to build up air defence grouping in the regions with increased military tensions, without compromising the reliability of air defence over installations in other areas.
- The need to lay emphasis upon "aerospace defence" in particular.
- To maintain high combat readiness and institute such qualitative military reforms that would stimulate such air defence assets that could survive the most advanced air and space attack weapons.

While the Russian military doctrine of 1993 was heavily influenced by the conduct and end result of the Gulf War, the attack on Yugoslavia in March 1999 marked a watershed in Russia's assessment of its own military requirements and defence priorities. The military doctrine approved in April 2000 takes into account the evolving threat from the technologically superior NATO countries. The new versions of *the National Security Concept and Military Doctrine* largely reflect

---

22. Ibid., p.437.

Moscow's military reaction to the Balkan War.[23] "Today Yugoslavia-Tomorrow Russia" was the deeply felt public consensus which compelled the Russian military leadership to launch military reforms even though economic conditions were not favourable for development and deployment of sophisticated high technology weapons. To protect its industrial and economic assets, infrastructure and military targets from the kind of precision stand-off weapons used in Yugoslavia, there was a renewed determination on building up and modernising Russia's air force, air defence and naval assets. Development of the S-300 and S-400 series of missiles, a new air superiority multi-role fighter, development of the fifth generation fighter, the new Yakhont type cruise missile and new long range conventional anti-shipping missiles are some of the examples of Russia's modernisation efforts.[24]

REFORMS IN THE RUSSIAN AIR FORCE

The Russian Air Force (VVS) was established on May 7, 1992. The VVS was organised into major commands subordinated to the authority of the VVS commander-in-chief and large strategic formations subordinated to the long range, frontal and military transport aviation commanders. The reforms introduced by VVS Commander-in-Chief Gen. Deinekin in 1993 were to be implemented in three stages. The first stage from 1991-92, included the formation of the new VVS high command and revision of the VVS organisational development concept. The second stage from 1993 to 1995, included withdrawal of all VVS assets from former Warsaw Pact countries, development of new VVS formations in Russia, planned reduction in personnel, and reforms in the acquisition and cadre systems. The third stage, from 1995, was to include the complete overhaul of the airfield network and the implementation of new logistical and cadres training systems.

Russia's military aviation industry nearly collapsed in 1990s. For most of the decade, the Russian government avoided buying any significant numbers of aircraft (only 9.4per cent of VVS procurement programme were funded in 1996, 3.4 per cent in 1997 and 1.6 percent in 1998), forcing the industry to focus its activities on the export market.[25] The modernisation of the fighter fleet continues

---

23. Arbatov, n.2, pp. 7-11.
24. Arbatov, Ibid., p. 12.
25. Lefebvre, n.5, p.154.

to lag behind schedule. As of 2002, 50 percent of the aircraft were more than 15 years old and another 20 percent were at least 10-15 years old. The VVS' objective is to modernise 20-25 percent of the fleet to fourth generation-plus level until a fifth generation multi-role aircraft enters service around 2010 to replace the MiG-29 and Su-27 aircraft. The development cost of fifth generation aircraft, officially referred to as the frontal aviation advanced aviation system *(Perspektivnyy Aviatsionnyy Kompleks Frontovoy Aviatsii- PAK FA)* is expected to reach US $ 1.6 billion, of which Russia is expected to cover only 20 percent of the cost and the remaining is to be funded by export customers.[26]

The modernisation of air defence focusses on upgrading or replacing the older radars and weapon control systems in order to maximise the effectiveness of new precision guided missiles and avionics suites. The infrastructure projects include development of over the horizon (OTH) and bi-static radars. A new civilian-military surveillance system called the federal system for reconnaissance and control of the air space of the Russian Federation (FSR I KVP) is being developed, which will provide Russia with a unified air traffic control system.[27] There is considerable emphasis on building up a reliable air defence:

> The most important priority of our state's military reforms must be the reliable air defence of our economic potential and infrastructure, which must be transformed into an all state strategic aerospace (anti-missile, anti-space, and anti-cruise missile simultaneously) precision defence....It is necessary to destroy the aggressor's air and naval delivery systems before the point at which they launch their precision cruise missiles.... The country's air defence (PVO) must include simultaneously anti-aircraft, anti-cruise missile, anti-space and anti-missile defences.... The new military dangers of the future cause the need in the course of state military reform to create a space grouping composed of several hundred satellites for various purposes by no later than 2015; without this, Russia will be left in the past generations of wars with all the ensuing consequences.[28]

To support the military modernisation plan, Russia increased its military

---

26. Lefebvre, Ibid., p.156.
27. Ibid.
28. Vladimir Slipchenko, "The Strategic Content of the State's Military Reforms (A Prognostic View)," *Vooruzheniye Politika Konversiya,* July 7, 2003, as cited by Dr Andrei Shoumikhin in "Wars of the Future: Implications for the Reforms of the Russian Armed Forces" in National Institute for Public Policy, April 2004.

spending by 8.8 percent in real terms in 2005. At the presentation of the 2005 budget, Minister of Defence Sergei Ivanov said that for the first time after 1991, the Russian budget fully reflected the needs of the military.[29] Between the years 2000 to 2004, the average Russia military expenditure has been 4.06 percent of the gross domestic product (GDP). An analysis of Russia's military expenditure would indicate that between 2000 and 2005, the Russian military expenditure has grown from US $ 14,100 millen to $ 28, 814 million, a growth of more than 100 percent, at the 2005 value of the US$.[30]

However, all modernisation programmes are not achieving the desired results. As of 2007, the VVS is not in a position to project power far beyond the Russian landmass and air defence is incapable of aerospace defence in the true sense. In 2004, Anatoly Kornukov, the former commander of the Russian Air Force said, "Russian air defence is in deplorable condition, but it is not hopeless, the country's air defence weapons remain the same as several decades ago due to the lack of funds and the absence of modernization. Russia needs an inexpensive but reliable space defence system, capable of protecting it from air and space strikes." Space defence should become a vital part of a system to deter possible aggression against Russia.[31] Clearly, the Russian military leadership feels that it continues to lack the aerospace defence capability. Though it was predicted in 2002 that a modern air force with a professionally and technically proficient staff is not likely to emerge until 2010, five years down the line, it appears that even 2010 was perhaps an optimistic prediction.

Merger of VVS and PVO

As part of organisational reforms, a 1995 study on "The Russian Air Force" (conducted by the VVS high command and directed by Gen. Deinekin) laid out the motives of merging the VVS with the air defence forces (PVO), then one of the five branches of the armed forces.

The merger of the VVS and PVO was motivated by the necessity to have a centralised view of the air picture.

29."Military Expenditure," *SIPRI Year Book 2006*, (New York: Oxford University Press, 2006) p.321.
30. Ibid., p.330-348
31. "Russian Air Defence," available at www.gateway2russia.com, accessed on May 25, 2007.

The merger of the VVS and PVO was motivated by the following factors:[32]

- Historical experiences.
- The organising principles of foreign armed forces with the three branches of the Services.
- Necessity to have centralised view of the air picture.
- Optimised use of resources and cutting expenditure.
- Joint procurement, logistics and training practices.
- Reduction of personnel from 340,000 to 180,000.

The merger was decreed by President Boris Yeltsin on July 16, 1997, and it was to be completed by January 1, 1999. The PVO's missile and space defence troops *(Voyska Raketno-Komicheskoy Oborony-RKO)* were excluded from the merger and subordinated to the strategic missile forces. The merger of the VVS and PVO was followed by reduction of manpower where the air defence forces lost 30 percent of the units and 60 percent of the trained personnel. The merger proceeded in two stages; the first stage, completed on March 1, 1998, saw the integration of two high commands (VVS and PVO) into one. The second stage, completed in the end of 1998, saw the reorganisation of both branches' large strategic formations.

This included formation of:[33]

- Moscow Air Force.
- Air Defence District (renamed Special Purpose Command of the Central Air Defence Zone in 2002) in the western strategic sector.
- Air force and air defence armies under the operational control of military districts commanders.
- Independent Air Force and Air Defence Corps in Volga and Ural military districts.

At the time of the merger, the biggest problem was to devise a single command and control system for all air force assets. The aviation command and control systems were not protected sufficiently and had very little mobility. The

---

32. Lefebvre, n.5, pp.145-146.
33. Lefebvre, Ibid.

communications, radars and electronic support equipment that were working were mostly obsolete. Frontal aviation was divided into air force and air defence armies directly subordinated to the commander-in-chief, but under the operational control of military districts, each corresponding to an operational strategic command.

OPERATIONAL DEPLOYMENTS: THE CHECHEN CAMPAIGN

During the two operational deployments of the Russian Air Force in Chechnya (1994-96 and 1999-2002), the air defence forces were not tested at all. During the first campaign, the focus of the Russian Air Force was mainly on reconnaissance, air strikes on the Chechen Air Force, interdiction sorties, fire support to ground troops and air transport support operations. The VVS easily eliminated the Chechen Air Force and its 266 aircraft. A-50 (Mainstay) AWACS maintained round-the-clock surveillance to monitor all incoming or outgoing traffic on all sides of Chechnya. Surveillance and monitoring of air traffic had commenced in August 1993 to close the Chechen air space to prevent influx of military assets of any kind. The VPVO had employed two to six MiG-31 or Su-27s on constant combat air patrol to intercept any aircraft that may attempt to resupply the Chechens or interfere with Russian troops on the ground. Since there was no other air-to-air threat, these were the only fighters involved in the war. By the end of January 1995, VPVO interceptors had flown 1,500 hours on combat air patrol (CAP) to blockade Chechen borders from external resupply by air.

A-50 AWACS covered virtually the entire region and were supported by low-level gap filler radars provided by VPVO radar platoons and companies.[34] AWACS assisted in achieving the strategic politico-military objective by exploiting information warfare techniques and eventually allowed the Russian Air Force to eliminate President Dudayev. In April 1996, while talking on a cellular phone, he was reportedly targeted by the Russian A-50 (AWACS), which is capable of tracking radio frequencies. The A-50 relayed the target data to Su-25 ground attack aircraft armed with laser and TV guided bombs. A picture

---

34. Lambeth, n.4, pp.199-200.

taken by the warhead as it approached Dudayev was printed in *Argumenti I Fakti*, a publication thought to have close ties with Russian intelligence.[35]

In the second Chechen campaign, the VVS air support missions were better coordinated and fewer fratricide cases were reported as compared to the first campaign. Once again, Su-27s were used for CAP missions and A-50 AWACS were used for sanitising the air space. Since Chechen air defence forces were negligible, the Russian Air Force operated in conditions of complete air superiority.

AIR DEFENCE FORCES AND CURRENT CAPABILITIES

Fighter Aircraft

The Russian Air Force has a fleet of 660 aircraft (multi-role and interceptor aircraft) for the air defence role. The major portion comprises about 220 MiG-29 ''Fulcrum'', 240 MiG-31 ''Foxhound A'', 130 Su-27 "Flanker-B" and smaller quantities of Su-30SM "Flanker-B" and MiG-23 M "Flogger" Su-30, Su-35, etc.[36] The MiG-29, Su-27 and Su-30 are more than 20-year-old aircraft and their avionics, airborne radars, fire control systems need to be upgraded. Quantitatively it remains a formidable force, but qualitatively, these aircraft are much behind their Western counterparts. Therefore, development of fifth generation fighters and finding collaboration partners willing to invest in the Russian PAK-FA project become that much more crucial to the future of Russian air defence forces. The progress on the PAK-FA project is not known, and though India and Russia have agreed on joint development, the deal has not been finalised as yet. As of now, it appears it may not be feasible for Russia to achieve the deadline to meet the initial operational capability in 2010, as reported in the media, and 2015 would be a more realistic time-frame to see the PAK-FA in operation.

Surface-to-Air Missiles (SAMs)

Development of SAMs in the erstwhile Soviet Union and in Russia has kept pace with the evolving technology and changing nature of warfare. The

---

35. Timothy L.Thomas, "Air Operations in Low Intensity Conflict: A Case of Chechnya " *Airpower Journal,* Winter 1997, p.54.
36. *Jane's World Air Forces*, issue 24, August 2006, p. 402.

modern generation systems like the SA-13 "Igla", Tungushka, Tor-1M, BukM1-2, S-300 variants take care of all kind of aerial threats from aircraft, unmanned aerial vehicles (UAVs), and cruise missile systems. The existing air defence network of Russia extensively relies upon SAM systems which cater to the threat at varying altitudes and ranges, with overlapping and supporting coverage.[37] The Russian air defence forces currently deploy more than 30 regiments equipped with S-300 (NATO reporting name SA-10 Grumble) missile complexes. The multi-channel mobile S-300PMU serves for covering cities and industrial installations from enemy air raids, defending command and control posts located in strategic depth. The system has a short reaction time, high degree of automation, and high firing capabilities (3 seconds per launch). It can simultaneously track nine targets and independently fire at six targets. The S-300PMU can hit targets flying at speeds of up to 10,000 km/h at altitudes from 25 to 30,000 metres and has a guaranteed effective range of 90 km. The system consists of the 6AN6E "Big Bird" phased array surveillance radar, the 36N6E "Flap-Lid" phased array multi-function engagement radar capable of tracking stealth targets. The system employs the 48N6E SAM. It is a single-stage solid-propellant missile, effective against aircraft, helicopters, tactical and cruise missiles. The shipborne version, S-300F Rif (Reef) (USA/NATO designation Grumble), is intended for maritime air defence against enemy aircraft and cruise missiles. The S-300F is effective against manoeuvring and sea-skimming targets. The ammunition of the Rif may consist of 48 or 64 SAMs. This system is installed on the Slava class cruisers in eight cell rotary launchers.

Meanwhile, on August 6, 2007, Russia deployed the first air defence regiment equipped with state-of-the-art S-400 Triumf (NATO codename SA-21 Growler) missile system near the town of Elektrostal, about 50 km east of Moscow.[38] An S-400 battalion comprises at least eight launchers and 32 missiles and a mobile command post. The missile has been designed to intercept and destroy airborne targets at a range of 400 km (250 miles), that is twice the range

---

37. Tiwary, n.7, pp.35-36.
38. Dadan Upadhyay, "Russia Deploys Modern Air Defence Missiles Around Moscow," *The Indian Express,* August 7, 2007.

of the US MIM-104 Patriot. The system is reportedly highly capable of destroying stealth aircraft, cruise missiles, and ballistic missiles with a speed of up to 4.8 km per second (17,280 km/ph). Experts believe that the ability to intercept and destroy cruise missiles and ballistic missiles makes the S-400 a crucial part of theatre missile defence. Lt. Gen. Alexander Gorkov, the air force air defence chief, said that Russia plans to deploy new air defence systems primarily around all strategically important administrative and political centres in two stages by 2015.[39]

Ground-Based Radars and AWACS

In the erstwhile Soviet Union, a network of more than 10,000 radars provided virtually complete territorial coverage at low, medium and high altitude within and in some areas well beyond its borders. Post-Soviet Union, however, Russia lost large numbers of early warning radars deployed in the Soviet states. A majority of the ground-based radars of the Russian Air Force are of the old generation (P-18, P-19, P-35/37 P-14, etc) and very little upgradation or modernisation has taken place. An estimated 50 percent of Russia's border is unprotected by radar because the equipment of the radio-technical forces is inoperable. In December 2001, the commander of the VVS radio technical troops, Lt. Gen. Aleksandr Shramchenko, accepted that there is only a thin thread of radar coverage along the borders with Kazakhstan, Mongolia and China. The radars in service were of a very old generation and only about 10 percent of them could be modernised every year.[40] The Rosoboronexport State Corporation has upgraded older radars like the P-18-2 and the company is promoting newly developed radars like the 1L117, 64L6E Gamma-S1E, 67N6E Gamma-DE, Kasta-2E and Oborona-14 early warning and surveillance radars for induction in the Russian Air Force.[41]

Russia is also in the process of developing an integrated automated radar system and it is likely to be operational by 2010. The commander of the air force radiotechnical troops, Maj. Gen. Anatoly Boyarintsev has indicated that the

---

39. "Russia to Deploy S-400 Air Defence Systems Around Moscow in August," Moscow, July 27, 2007, available on www.domain-b.com accessed on August 01, 2007.

40. Lefebvre, n.5 pp.154-155.

41. "Land-Based Air Defence Radars" in Martin Streetly, ed., *Jane's Radars and Electronic Warfare System* (2006-2007), pp. 25-34.

programme was launched in 2006 and US$ 170 million (Roubles 4.5 million) has been earmarked for the development. It will integrate the technical and financial capacities of all Russian agencies that have radar facilities and enable the air defence tasks to be carried out more effectively. The Russian Air Force will also receive a new type of radar to be used in mountainous terrain in early 2008.[42]

The Russian Air Force operates the 12-15 Beriev A-50 AWACS. This system is at least 20 years old. There are unconfirmed reports that an upgraded version known as the A-50U is already in service with the Russian Air Force and a new variant, with a new radar, better tracking ability, faster data processor and new electronic warfare suite is likely to be inducted in 2008.

Air-to-Air Missiles

There are large numbers of-air-to air missiles in the Russian Air Force inventory and some of them have been developed during last the 20 years. The Vympel Corporation has designed a wide range of air-to-air missiles for new Russian fighters and it includes the short range R-73 (AA-11 Archer), medium range R-27 (AA-10 Alamo), active radar homing R-77 (A-12 Adder) and long range missile to counter bomber targets R-33 (AA-9 Amos). The different versions of the R-23, R-27, R-77 are widely used amongst many air forces in the world. Russia's primary medium range missile, the R-27R, entered service as a semi-active radar homing missile. The subsequent versions of these missiles are known as the R-27T (thermal IR) and R-27P (anti-radiation) and R-27 E (extended range). In 1992, Russia announced that it had two new versions, the R-27 EA with an active radar homing head, and the R-27 EM, which is a semi-active radar homing head specifically designed for Su-35 aircraft.[43]

The R-77 (RVV-AE) active radar homing head beyond visual range (BVR) missile, with significant amount of manoeuvring capability, is comparable to the USAF AMRAAM. This missile is in service with the Su-27M, MiG-29 M and MiG-31M aircraft. It is reported that at least two more versions of this missile are at the research and development (R&D) stage, one with improved infra-red (IR)

---

42. n.39.
43. Russian Air Force, "Weapon Systems: Aircraft Radars Systems and Homing Heads," available at www.sci.fi/~fta/ russia2.htm accessed February 25, 2007.

seeker and another one with more powerful propulsion. The latter is expected to attain ranges up to 160 km at higher altitudes.

The R-33 (AA-9 Amos) was developed specifically for the MiG-31 as a semi-active radar homing missile. The missile is designed for targets with less manoeuvrability like bombers, and maximum range is reported to be 120 km. In the advanced MiG-31M version, the plan is to replace the R-33 with the R-37 missile in which a semi-active homing head has been replaced with an active radar. However, progress on the development of the MiG-31M and the missile is not known.

The Russians also brought up the idea of a missile that could be fired backwards. The missile design is based on the R-73 (AA-11 Archer); it weighs 5 kg more and is about 30 cm longer. It is an IR seeking missile and operates on two wavelengths. The angle of view is 60 degrees and the range is from one km to 10-12 km. The missile range is affected by unfavourable launch velocity conditions. This is primarily a self-defence missile for bombers and intelligence aircraft.

The missile production in Russia is also facing similar financial problems as aircraft production and missile development programmes are considerably slow because of the dependence on export markets. Yet after the first few years of despair, the Russian aircraft and missile industry has continued to produce technologically advanced weapon systems comparable to Western systems. With an improving economy and resurgent armed forces, the prospects for the defence industry are looking better.

Capabilities

As of 2007, the Russian air defence is recovering from two decades of organisational restructuring, operational redundancy and financial crisis. With the existing resources and development plans, Russian air defence is capable of defending its strategic political, military and industrial assets from a smaller regional adversary's and as well as internal and external subversive forces. However, the existing air defence network may not stand up to a technologically superior coalition like the NATO countries or the might of the aerospace power of the USAF. Russia is still considered a militarily strong nation primarily because of the potential of its

defence industry and its strategic nuclear capability. Since the Russian focus is on the USA and NATO countries, it has virtually left unattended the air defence requirements east of the Urals against China and Japan. The radars and early warning resources are stretched and a large territory of Russia is bereft of radars cover, the airborne early warning systems are very old and need to be upgraded, and the state of fighters has already been covered earlier. Russia also lacks integrated command and control systems for air defence operations, and its space-based capabilities, as compared to its adversaries, are severely limited. Therefore, the Russian air defence remains handicapped to that extent and it is not in a position to take on a numerically at par but technologically superior adversary. Nonetheless, Russia aims to launch a technologically competitive and professional air force and air defence forces by 2015, and considering the rising economy and defence expenditure, it may be possible for it to catch up with its Western adversaries by 2020, if not by 2015.

CONCLUSION

Russia is cautious of aerospace threats from the USA and the NATO countries, including stealth technology, precision cruise and ballistic missiles, information warfare systems. The Russian military strategy has always laid greater emphasis on deterring and repelling aggression, hence, the role of air defence forces has always remained central to the country's overall military doctrine and is seen as a major deterrent in preventing a military conflict and protecting Russia's sovereignty, while supporting the ground and naval forces. This doctrine is now shifting towards an independent strategic role for the VVS, and air defence moving into the sphere of aerospace defence.

The Russian politico-military leadership is deeply conscious of the sliding status of the Russian Federation from one of ''most powerful country'' in the world to one of

Russian military strategy has always laid greater emphasis on deterring and repelling aggression, hence, the role of air defence forces has always remained central to the country's overall military doctrine.

''bigger country'' which hurts the Russian self-respect and public sensibilities. Therefore, it is one of the objectives of the Russian leadership to restore the pride and status of Russia as one of the most powerful nations. This would require a powerful air force with an effective air defence capability. There are signs that the transition of the Russian Air Force through the period of despondency and economic crisis will end sooner rather than later. The process of reforms, higher oil prices, an improving economy and increasing defence budgets are showing the light at the end of the tunnel. There are signs of accelerated processes to modernise, upgrade and introduce new radars, fighters, SAMs, electronic warfare systems, etc.

The Ministry of Defence has issued a comprehensive document clearly articulating the development goals and perspectives for the Russian armed forces.[44] The impact of an improving economy and modernisation is already visible in the aggressive politico-military activities of the Russian leadership, especially since 2005; the decision of President Vladimir Putin to suspend the CFE Treaty on July 14, 2007,[45] is one example and the recent flights on two occasions of Russian strategic bombers, TU-95 (Tu-160), in the north Atlantic towards the British coast, which were intercepted by Norwegian F-16 and British Tornados[46] and the media reports of Russian bombers buzzing the US base in Guam and planting of the Russian flag under the North Pole are all indicative of a more assertive Russia determined to develop offensive and defensive capabilities to match its adversaries over a period of the next 10-15 years. The process of modernisation of the Russian air defence has started; however, there are many factors that would decide the pace of the modernisation, and it appears that "a modern air force with a professional and technologically proficient staff is not likely to emerge until 2020."[47]

44. "Russian Armed Forces: Development Goals and Perspectives," The Ministry of Defence of the Russian Federation, 2004.
45. "Russia Suspends CFE Treaty," *RIA Novosti*, (Moscow), July 14, 2007, downloaded from www.indiadefence.com on July 30, 2007.
46. Richard Beeston, diplomatic editor, "RAF Scrambles to Intercept Russian Bombers," available on http: // www.timesonline.co.uk accessed on 27 Jul 2007.
47. Lefebvre, n.5, p. 157.

THE INFORMATION-BASED RMA AND THE PRINCIPLES OF WAR

LEONARD G. LITTON

INTRODUCTION

One cannot read many articles in today's military, strategic, or national security journals without stumbling upon the topic of an emerging revolution in military affairs (RMA). Many writers are promoting the idea that the character and conduct of warfare is undergoing a significant change, driven primarily by the ability to acquire, collect, disseminate, and employ information in a very rapid manner. The essence of the information-based RMA (the term I will use) is that it is revolutionary, rather than evolutionary, and will provide increases in the combat capability of an armed force "orders of magnitude" over any potential adversary who has not mastered the information-based RMA itself.

Conversely, there are many reasons to believe that warfare is more evolutionary than revolutionary. There is a body of thought that suggests that there have always **There are many reasons to believe that warfare is more evolutionary than revolutionary.** been in existence basic elements of our doctrine, the principles of war. Joint Publication 3-0 tells us, "The principles of war guide warfighting at the strategic, operational, and tactical levels. They are the enduring bedrock of US military doctrine." If the principles of war truly function as the "bedrock" of our military doctrine, they should be continually examined for correctness, pertinence, and applicability to the way in which we will conduct warfare in the 21st century. We

must ask ourselves some hard questions, such as: Will total battlespace awareness minimise the principle of surprise or perhaps render it obsolete? Will mass be defined in a totally different way? Will the principle of the offensive become dominant among the principles of war? Will some new principles become applicable as the technology and conduct of warfare change?[1]

The focus of this paper will be to analyse the current principles of war based upon the emergence of an information-based RMA. In order to build a solid basis, I will begin by providing a discussion of the significant issues concerning both the RMA and the principles of war. Next, by using the information-based RMA as a lens to focus my efforts, I will examine its impact on the principles of war. For the purpose of brevity, I will analyse only those principles which I believe will be most affected. Finally, I will propose changes concerning the principles of war and offer recommendations.

PRINCIPLES OF WAR

A Historical Perspective

The principles of war: Objective, Offensive, Mass, Economy of Force, Manoeuvre, Unity of Command, Security, Surprise, Simplicity. Military officers first learn of these principles as lieutenants and seek to refine their understanding throughout their careers. They hold a place of importance in our doctrine-based force and serve as a "guiding light" to those who would seek success on the battlefield. To facilitate an understanding of these principles, I will briefly address three basic questions. (1) What constitutes a "principle?" (2) Where did they come from? (3) And, what is their significance to the warfighter today?

The principles of war are not expressed in neat algebraic formulas nor do they possess the same characteristics as the laws of nature and science. We teach that these principles should not be adhered to blindly and that each principle may apply directly to one situation and not at all to another. Many even argue that since war is an art and not a science, in the truest sense of the word, principles do not apply to war. But war is both art and science. "Science consists of

1. Additionally, as I was preparing to write this paper, I read many articles concerning the information-based RMA and many separate articles dealing with the principles of war. However, I failed to find a single article dealing specifically with the integration of the two concepts.

knowing; art of doing."[2] Regardless, "no art exists without certain fundamental truths, which can be derived from analysis, from logic, and from the successes and failures of those who have plied the art."[3] The bottom line is this: "a principle" of war is, in practice, a guide to action concerning the application of combat power, rather than an unquestioned truth with universal application to every single military operation."[4]

Antonine-Henri Jomini was probably the first individual whose writings led to the concept that a small set of principles could serve as a guide for the commander to succeed on the battlefield.[5] Jomini wrote, "The fundamental principles upon which rest all good combinations of war have always existed, and to them all others should be referred for the purpose of arriving at their respective merits. These principles are unchangeable; they are independent of the arms employed, of times, and of places."[6] Following World War II, the British adopted the first official list of principles of war, due greatly to the influence of J.F.C. Fuller, which included eight items: Maintenance of the Objective, Offensive Action, Surprise, Concentration, Economy of Force, Security, Mobility, and Cooperation.[7] In 1921, when the US War Department listed principles of war in Training Regulation 10-5, eight of the nine principles listed were identical to those of British origin.[8] However, between the years 1928 and 1949, not a single definitive list of the principles of war appeared in any official U S Army doctrine manual. The list of nine principles that we currently use today did not appear in the US Army Field Service Regulations until 1949.[9]

It is also interesting to note that the principles of war are not the same throughout the major militaries of the world. The US military currently holds that there are nine principles, the French only three, and the British and Russian

2. C. R. Brown, "The Principles of War," Proceedings, June 1949, p. 623.
3. John I. Alger, *The Quest For Victory* (Westport, Conn.: Greenwood Press, 1982.) , p. ix.
4. Russell W. Glenn, "No More Principles of War," *Parameters*, Spring 1998, p.56.
5. Alger, n.3, p. 18.
6. Marshall L. Fallwell, "The Principles of War and The Solution of Military Problems," *Military Review*, May 1955, p. 50.
7. Alger, n.3, p.122.
8. Alga, Ibid., p. 140.
9. Ibid., p. 164.

militaries, ten. These principles, even though there is a great degree of similarity in name, are different in definition and application across the board.[10]

This historical perspective highlights several issues. First, the very concept that a certain limited number of "principles", by which warfare should be conducted in all situations and for all times, even exists and can be codified into nine, ten, or eleven principles has always been, and still is, under debate. Even if a set of "principles of war" does exist, their exact number, content, and definition is a second area of disagreement. Finally, history reveals that even in our own experience as a military, there has not been homogeneous thought about the concept or the content of the principles of war.[11] Russell Glenn provides an excellent summary in his article, "No More Principles of War?" He states, "History reveals that the principles of war have frequently been the subject of long and often inspired debate; their character, number, and definition have changed repeatedly. They took their present form in US Army doctrine only 49 years ago. On the one hand, this span is but a fraction of the years spent in their study. On the other, much has transpired since 1949. One may legitimately ask whether the principles as they stand could meet the needs of US armed forces half a century from now."[12] We, too, should consider the same question, but more specifically, will they meet the needs of the information-based warrior?

REVOLUTION IN MILITARY AFFAIRS

The Information-Based RMA

Exactly what is a revolution in military affairs? In his article "Calvary to Computer: The Pattern of Military Revolutions," Andrew Krepinevich describes an RMA as "what occurs when the application of new technologies into a significant number of military systems combines with innovative operational concepts and organizational adaptation in a way that fundamentally alters the characteristics and conduct of conflict. It does so by producing a dramatic increase—often an order of magnitude

---

10. Fallwell, n.6, p. 52.
11. Fallwell, Ibid., p. 53.
12. Glenn, n.4, p. 64.

or greater—in the combat potential and military effectiveness of armed forces."[13] The key proponents of the current information-based RMA state that a combination of high-tech sensors, robust information systems, focussed intelligence, stealth technologies, advanced command, control, communications, computers (C4), and precision weapons will enable the commander to "see and understand everything on a battlefield, and if you see the battlefield, you will win the war."[14] Admiral William A. Owens, former vice chairman of the Joint Chiefs of Staff (JCS), was one of the early advocates of the information-based RMA. He believed that if the US armed forces could integrate their currently procured sub-systems into a higher "systems-of-systems," they would be able to achieve and sustain "information dominance." By communicating this information rapidly throughout the forces they would be able to react with speed, precision, and accuracy that would produce a devastating effect upon the enemy and "propel the US military to a qualitatively new order of military power."[15] In relation to the principles of war, it is critically important to note that it is often the operational innovations, or doctrinal changes, that prove to be more important to the full development of the RMA than is the element of technology itself.

> It is critically important to note that it is often the operational innovations, or doctrinal changes, that prove to be more important to the full development of the RMA than is the element of technology itself.

THE PRINCIPLES OF WAR

A New Paradigm

Guiding principles are important to any organisation for they form a paradigm that serves as the basis for the way in which its members think and act. In our

---

13. Andrew F. Krepinevich, "Calvary to Computer: The Pattern of Military Revolutions," *The National Interest*, Fall 1994, p. 30.
14. Mackubin Thomas Owens, "Technology, the RMA, and Future War," *Strategic Review*, Spring 1998, p. 67.
15. James R. Blaker, "Understanding the Revolution in Military Affairs," *The Officer*, May 1997, p. 27.

doctrine-based military, the principles of war serve to form our paradigm concerning the art of war. We must choose our words and definitions carefully, for they convey to our soldiers what we hold to be true about our profession. If the information-based RMA has the potential to deliver on its promises, then we must begin to embrace it by reexamining the underlying elements of our doctrine, the principles of war. The following paragraphs will examine six of the principles which may be most affected by the emergence of information-based warfare.

MASS

The purpose of mass is to concentrate the effects of combat power at the place and time to achieve decisive results.[16]

The advent of the information-based RMA may cause us to think of the principle of mass in a significantly different manner. Most will agree that the tactics used by the 8th Air Force in World War II, in which hundreds of B-17 bombers delivered thousands of tons of bombs on the factories and towns of Germany in the attempt to destroy one single target, is a thing of the past. Today, with the advent of high-tech weapon systems, soldiers no longer talk of massing forces, but of massing effects. It is no longer required to bring forces into the same geographical area to bring their effects to bear on the same target and, in fact, on the modern battlefield, it may be dangerous as well.

Consider Colonel Phillip Meilinger's statement that "the result of the trend towards 'airshaft accuracy' in air war is a denigration in the importance of mass."[17] He goes on to say that, in reality, what we have been seeking all along is not mass (any large amount or number) but density (mass per unit volume).[18] It is a waste of resources to "over-destroy" the target, but neither do we want to have to come back again to finish the job another day. What we ultimately desire to achieve is the right effect on the right target at the right time. Mass has nothing to do with one F-117 stealth fighter delivering a precision-guided weapon down the airshaft of a telecommunications building with the resulting effect of destroying the main

16. Joint Chiefs of Staff, Doctrine for Joint Operations (Joint Pub 3-0) (Washington: February 1,1995), A-1.
17. Phillip S. Meilinger, "Ten Propositions Regarding Airpower," *Airpower Journal*, Spring 1996, p. 64.
18. Meilinger, Ibid., p. 65.

critical node contained in that building. That particular attack involved one airplane delivering one weapon, but had the same effect as hundreds of B-17s.

We should reconsider the concept of mass as used by Napoleon and the World War II air campaign planners and refine our understanding of this principle for three reasons. First, precision guided weapons are expensive, and in the climate of reduced budgets, we must be somewhat judicious in the employment of these weapons. In an attempt to destroy a peer competitor's information infrastructure, we may soon realise that the number of targets required to be hit could place a strain on the number of available weapons. That is not to mention the possibility of fighting a second major regional conflict within a short period of time, as our current military strategy requires. Second, if we are required to resort to physical destruction of information-based targets, they are likely to be located (or co-located) in urban areas that have a highly concentrated civilian population. In this instance, we will probably not be able to employ a large amount of non-precision firepower (traditional mass) because the American people will require that we avoid civilian casualties. Third, a significant factor of the information-based RMA will be speed with which wars are won or lost. If our objective is to bring strategic paralysis to our enemy before he has the chance to do the same to us, we must deliver the right weapon to the right target the first time. Logistical constraints will demand that we not bring more than we need, which may leave some targets uncovered, and we may not be given a second chance if the peer competitor is equally successful at attacking us. We should begin to think in terms of "density," rather than "mass," as this word more fully exemplifies the concept of rapid precision strike that the US military will need to embrace as this information-based RMA unfolds.

The purpose of the principle of objective is to direct every military operation toward a clearly defined, decisive, and attainable objective.

OBJECTIVE

The purpose of the principle of objective is to direct every military operation toward a clearly defined, decisive, and attainable objective.[19]

---

19. n.16.

Field Manual 100-5, Operations, published by the US Army, states as its first sentence in the explanation of the principle of objective, "The ultimate military purpose of war is the destruction of the enemy's armed forces and will to fight." However, the information-based RMA, with its promise of the capability to render the enemy "strategically paralysed" in a relatively short period of time focusses less on the enemy's armed forces and more on his leadership, C2, and infrastructure. In addition, the continuing improvements in sensors, the "sensor-to-shooter" information systems, and the accuracy of precision weapons means that in the future more of the enemy's forces will be seen and more of what is seen can be destroyed. John Orme states, "Once the (information-based) RMA power has demonstrated the ability to kill nearly all of what it sees, simply communicating to the enemy that 'we know where you are' may be enough to persuade them to surrender or withdraw."[20] So, even though the principle of objective will retain its importance, the information-based RMA may serve to refocus it away from the long standing concept of the destruction of the enemy's armed forces.

Another aspect to consider is time, that is, when in the course of a conflict should one consider the principle applicable? Traditionally, commanders have thought of the objective in predominantly physical terms, such as a ridgeline, an enemy force, or as a condition to be achieved such as air superiority. This paradigm tells us the "objective" is achieved primarily by "force-on-force" and does not apply until hostilities are eminent. However, with the advent of the information-based RMA, the early struggle for information dominance may begin by simply inserting a computer virus into the enemy's command, control, communications, computers, intelligence (C4I) networks. This could occur days, weeks, or even months before the onset of forces being employed. Thus, commanders may now wish to consider their "objectives" much sooner than in the past, as well as thinking of this principle as much in "intangible", as well as tangible, ways.

OFFENSIVE

The purpose of an offensive action is to seize, retain, and exploit the initiative.[21]

---

20. John Orme, "The Utility of Force in a World of Scarcity," *International Security*, Winter 1997/98, p. 147.
21. n.16.

Throughout the history of warfare, theorists have sought to determine the stronger position in war, the offensive or the defensive. Traditionally, most have agreed

The information-based RMA will reinforce the principle of offensive.

with Clausewitz, "We must say that the defensive form of warfare is intrinsically stronger than the offensive."[22] However, the information-based RMA will reinforce the principle of offensive and possibly reverse this long-held axiom. It has always been clear to military commanders that you do not achieve victory in most conflicts without some offensive action. The offensive also allows the commander to maintain the initiative, forcing the enemy to react rather than act as he wishes, and denying him the opportunity to pursue his own objectives.

Maintaining and exploiting the initiative is all about attaining information dominance. The "fog of war," which serves to paralyse the commander and leads to inaction, is due primarily to a lack of information concerning his opponent. He is reluctant to act for fear of failure, but knows that he must do something or forfeit the initiative. The information-based RMA, by establishing information dominance, will serve to lift the "fog" for the commander relative to his opponent and make him more eager to act. Major Aresenio T. Gumahad states, "These future warriors will quickly outflank and outmaneuver an enemy with knowledge of its position and combat situation. With information age weapons at their disposal, they will engage an enemy precisely and decisively."[23] This confidence in the individual commander's ability to seize and maintain the initiative will provide a synergistic effect on the battlefield and serve to propel the "order of magnitude" effects this RMA will produce.

Also, the age-old requirement for the offence to concentrate forces in order to break through the defence is greatly reduced under the information-based RMA. John Orme predicts, "With continued improvements in the range and accuracy of weaponry and the effectiveness of command and coordination, it will become

---

22. Carl Von Clausewitz, *On War* (Edited by Michael Howard and Peter Paret, Princeton, NJ: Princeton University Press, 1976.) p.358.
23. Arsenio T. Gumahad, II, "The Profession of Arms in the Information Age," *Joint Force Quarterly*, Spring 1997, p. 17.

Also, the age-old requirement for the offence to concentrate forces in order to break through the defence is greatly reduced under the information-based RMA.

increasingly possible for the offense to concentrate fire but not forces before the enemy , which may shift the eternal contest between offense and defense decisively in favor of the attacker."[24]

Another aspect which will favour the offensive is the speed in which an information-based RMA force will be able to act. Wars may no longer last months or even years. The requirement to establish information dominance early in a conflict may require a massive preemptive attack on the enemy's information infrastructure as well as his capability to retaliate in kind. One who waits too long may find himself unable to launch credible resistance very soon after hostilities break out. These issues considered, the information-based RMA should cause us to examine the traditional balance between the offensive and defensive roles of warfare.

ECONOMY OF FORCE

The purpose of economy of force is to allocate minimum essential combat power to secondary objectives.[25]

At the heart of the current concept of economy of force is the need to preserve combat power for sustained and follow-on operations. This principle focusses one to think of a campaign primarily in a sequential nature in which several enabling objectives are achieved prior to ultimately arriving at the final goal. Lt. Col. Frederick Strain, US Air Force (USAF), in his article, "The New Joint Warfare" describes it this way, "Each phase establishes the requisite environment or conditions for the next operation. Developing campaign plans designed to 'peel the onion' layer by layer to get to the center of gravity is old thinking."[26] The Gulf War demonstrated the capability to attack the enemy at all levels – strategic, operational, and tactical – simultaneously, in a brief period

---

24. Orme, n.20, p. 151.
25. n. 16.
26. Frederick R. Strain"The New Joint Warfare," *Joint Force Quarterly*, Autumn 1993, p. 20.

of time, and effectively "locked out" many of Saddam's options very early in the conflict. As the information-based RMA unfolds, warfare will become less sequential and more simultaneous, promoting the concept of parallel attack in future campaign operations.

The information-based RMA may require us to think differently about the concept of reserve forces also. The following comments by the Chief of Staff of the US Army Gen. Dennis Reimer, help to illustrate this point, "We talk now about situational awareness...if we can do that (achieve it) we can change the way we operate. If you go to Ft. Leavenworth, they teach in terms of operations that when there is uncertainty and risk you keep a large reserve. Generally, most of the Army students will tell you it's two (units) up and one (unit) back. That's the way it has been for a long time. But if you can take that risk out of there, you can get more of your combat systems in the fight."[27] The primary reason to keep forces in reserve is to preserve combat power to be able to counter the unpredictable nature of the enemy. If information dominance renders the enemy significantly more predictable, the logic for a reserve force becomes less valid. The result is that the information-based RMA will allow joint force commanders (JFCs) to employ forces in a more simultaneous than sequential manner, as well as employing more of the force from the onset of hostilities.

> **If information dominance renders the enemy significantly more predictable, the logic for a reserve force becomes less valid.**

UNITY OF COMMAND

The purpose of unity of command is to ensure unity of effort under one responsible commander for every objective.[28]

Military units have traditionally been hierarchical organisations with the commander at the top and many successive layers to the bottom. In a hierarchy, there are strictly defined lines of communication, known as "the chain of command," in which data and information go up and commands come back

---

27. Dennis J. Reimer, Address to Naval War College, Newport, R.I., January 12, 1999.
28. n. 16.

down.[29] New data is routed to commanders, who assess its impact and then direct an organisational response. However, members of a hierarchy routinely act on incomplete information because they receive only the command and not the information underlying it. Therefore, subsequent decisions at the lower levels are likely to be made on incomplete or late data, resulting in uninformed action.[30]

Another characteristic of a hierarchy is that each successive level upward in the chain of command is likely to have a "bigger picture" of the battlefield than the last, thus, rendering the commander the most capable individual in the unit to make decisions.[31] However, consider the effect the information-based RMA will have on this hierarchical structure. What if the individual at the lower level was able to acquire the same "big picture" as the individual at the top? Before, the individual acted without question because all he received was a command without the underlying information; now this may no longer be true. Imagine, as well, the situation described by Major James K. Morningstar, "It is easy to envision brigade commanders having to fight the urge to bypass less experienced battalion and company commanders to guide platoon leaders at objectives via direct digital links."[32] The information-based RMA will force our "chain of command" to function more like a network (in a pure network, all individuals are equal and autonomous, all possible lines of communication can be used, there is no leader, any individual can interact directly with any other individual, and all decisions are reached by consensus)[33] resulting in a more flattened and responsive command structure. In this sense, the information-based RMA may challenge our current "hierarchical" concept of unity of command.

SURPRISE

The purpose of surprise is to strike the enemy at a time or place or in a manner for which it is unprepared.[34]

---

29. John W. Bodnar and Rebecca Dengler, "The Emergence of a Command Network," *Naval War College Review*, Autumn 1996, p. 94.
30. Bodner and Dengler, Ibid., p. 97.
31. Ibid., p. 94.
32. James K. Morningstar "Technology, Doctrine and Organisation for RMA," *Joint Force Quarterly*, Spring 1997, pp 37-43.
33. Bodnar and Dengler, n.29, p. 94.
34. n. 16.

The principle of surprise will be defined in two entirely different ways depending on whether or not we are fighting a peer-competitor. If we are engaging an adversary who has not mastered the information-based RMA, the principle of surprise could be an important aspect of the way we will employ force. Throughout the history of warfare, the element of surprise has been the exception rather than the rule. Forces were seldom surprised because of their ability to understand the enemy and to plan for his most likely courses of action. However, by achieving information dominance early on in the conflict, we will be able to "see" and "engage" the enemy's forces, while denying him that same capability. This ability to "surprise at will" may cause the enemy to withdraw or surrender simply by communicating to him that "we know where you are."[35] In this instance, surprise may become the norm, rather than the exception, for an information-based RMA power.

Conversely, with the capability of a peer-competitor to employ surveillance technologies and rapidly communicate information to his forces, the ability to "surprise at will" will probably not be a realistic option. In this type of conflict, the principle of surprise will be defined by two key elements: stealth and speed. "Stealth strengthens the attacker by restoring the prospects for surprise, perhaps close to the levels prevailing before the invention of radar, while accuracy radically diminishes the number of aircraft and tonnage of bombs needed to destroy a given set of targets."[36] For example, in Operation Desert Storm, F-117 stealth fighters flew more than 1,250 sorties, attacking valuable strategic targets in downtown Baghdad, without losing a single aircraft. Additionally, the speed at which information-based RMA forces will be able to act will allow them to continually operate inside the enemy's decision cycle, always leaving the opponent a step behind.

THE 10TH PRINCIPLE OF WAR

Legitimacy

Not only will the information-based RMA alter our understanding of the current

---

35. Orme, n.20, p. 147.
36. Orme, Ibid., p. 152.

nine principles of war, entirely new principles may become applicable, such as the "Principle of Legitimacy." The American people are a large part of the American way of war, but the current principles give no consideration to this important fact. Long ago, Clausewitz wrote that war was not only the business of the military and the government, but of the people as well. More recently, the so-called Weinberger and Powell Doctrines urged that the US military should not be employed unless they enjoyed the support of the American people. Several articles have been written over the years that proposed the principle of morale should be added to the current list of principles. The morale of the troops is a very important factor, but the principle of legitimacy is much more encompassing than the morale of the military alone. Legitimacy encompasses the morale of the nation, and perhaps that of the entire world.

This information age we are currently experiencing is forever changing the way in which Americans view national and world events. Consider the impact of millions of people viewing the battlefield in real-time from their living rooms every evening. According to Major A. J. Echevarria, "Images of war and peace—either real or contrived— (will be able to) decisively influence national will or public opinion before authorities confirm or repudiate their authenticity."[37] CNN is now able to cover any conflict from the first deployment to the last shot fired, virtually as it unfolds. This trend will increase, as we are not far from the day when the war reporter will have the capability to transmit real-time video and audio feed directly from the battlefield.

> **"Images of war and peace—either real or contrived— (will be able to) decisively influence national will or public opinion before authorities confirm or repudiate their authenticity."**

Another aspect of the principle of legitimacy is the fact that the US has shown reluctance to act unilaterally in recent years, not for lack of military capability, but for the political realities of favourable world opinion. Americans, historically

---

37. Antulio J. Echevarria, II, "Dynamic Inter-Dimensionality: A Revolution in Military Theory," *Joint Force Quarterly*, Spring 1997, p. 30.

isolationists, have always sought the "moral high ground" when it comes to using force. Precisely because we are now the world's only superpower, the US will continue to seek coalition partners in order to avoid being labelled the "bully" of the free world.

We should have learned to heed the principle of legitimacy as a result of the Vietnam War. Our inability to properly address this important issue cost us dearly in that conflict. Military theory, historical perspective, and future realities make it clear that commanders should consider the impact of legitimacy just as importantly upon their future military operations as they considered mass, manoeuvre, and security in the past.

CONCLUSION

The information-based RMA, characterised by its ability to collect, digest, and distribute vast amounts of information, all at incredible speeds, promises to lift the "fog of war" and increase our military capability "orders of magnitude" above our peers. However, we should not forget that it is often the operational innovation, or doctrinal changes that prove to be more important to the development of the RMA than is the technological element itself. In order to fully realise the potential of the information-based RMA, we must challenge the paradigms we have formed concerning the "enduring bedrock" of our military doctrine, the nine principles of war. Commanders of tomorrow must think differently about the ways in which these principles govern and guide the employment of our "information warriors" of the future. We must constantly examine these principles and allow them to evolve along with the "advances in technology, adaptations by adversaries and potential adversaries, better understanding of military theory, and revisions in national strategy."[38] The revolution of the information-based RMA has shown us the times have changed; so must the paradigm we hold of the principles of war.

> **The revolution of the information-based RMA has shown us the times have changed; so must the paradigm we hold of the principles of war.**

38. Glenn, n.4, p. 53.

RECOMMENDATIONS

My recommendations are four-fold. First, intermediate and senior Service schools should review and revise their curriculum concerning the principles of war. The course material should include a brief discussion of the history of the principles of war, focussing on their evolutionary and changing nature. It should also include a discussion that serves to encourage officers to constantly challenge each principle in name and meaning. The Service schools must not allow students to accept the current nine principles of war without encouraging them to challenge their applicability to the current and future methods of operational art. Secondly, the War Colleges should sponsor an essay contest to encourage officers to think and write about new principles of war (or old principles with new applications) that will enhance the US military's ability to adapt organisationally and doctrinally to the information-based RMA. Thirdly, JCS should consider revising the principles of war and associated explanations found in joint publications to include the relevant issues highlighted by the information-based RMA and JV 2010. Finally, joint force commanders should consider future exercises and manoeuvres that will enable our forces to capitalise on the promises of the information-based RMA and promote a new paradigm for the understanding and application of the principles of war.

DISCLAIMER

The conclusions and opinions expressed in this document are those of the author cultivated in the freedom of expression, academic environment of the Air University. They do not reflect the official position of the US government, Department of Defence, the United States Air Force or the Air University.

    This article has undergone security and policy content review and has been approved for public release IAW AFI 35-101.

RESEARCH FELLOWSHIPS 2007-2009

Centre for Air Power Studies invites applications from Indian citizens desirous of undertaking research projects for a period of two years commencing July 15, 2007, broadly on the following areas:

- India's security and defence issues, strategy and doctrine.
- Military history, especially air operations and the employment of aerospace power.
- Military strategy, doctrine and modernisation in other countries (USA, Russia, China, Pakistan, etc.).
- Defence and aerospace industry, including R&D.
- Defence expenditure and arms acquisition trends.

The fellowships are tenable by serving and retired officers of the three Defence Services, Civil Services and civilian scholars below 60 years of age. Applications by serving officers must be forwarded through proper channels and will need to be approved by Service Headquarters before consideration. The fellowships would be awarded at three levels as per the following designations and minimum qualifications:

(i) **Senior Fellow**, with a Ph.D. and over 5 years research experience or 15 years experience in defence.

(ii) **Research Fellow**, with a Ph.D. or 10 years experience in defence.

(iii) **Associate Fellow** with minimum 3 years experience in research or 5 years experience in defence.

Remuneration (to non-serving scholars) will be according to experience and expertise (within the overall scales of Rs. 14,300-450-22,400; 12,000-375-18,000 and 8,000-275-13,500 and allowances respectively).

Applications are to be sent to **Director, Centre for Air Power Studies, P-284, Arjan Path, Subroto Park, New Delhi – 110 010, not later than June 30, 2007,** by post or Email to office@aerospaceindia.org complete with:

- Bio-data with personal details, qualifications and experience in academic research and publications if any and two copies of passport size photographs.
- Research Proposal (1,000 to 1,500 words) on the proposed topic.

AIR POWER
ANNUAL ESSAY COMPETITION - 2007

AIR POWER Journal is pleased to announce the Annual Essay Competition-2007 in order to encourage studies, discussions and literature on issues of importance for our defence and security. All serving and retired personnel of the Indian defence services and civil/police services (including IFS) are eligible to take part in the competition. The theme for the Annual Essay Competition - 2007 will be:

"Role, employment and impact of AWACS on air operations"

Essays should consist of original writing and conform to copyright laws and obligations. The author is to attach a certificate to that effect. The essay should contain both conceptual as well historical and current issues affecting the evolution, concepts and principles of planning, procurement and execution of air operations to cater for a strategic role for it in the broader context of national political-military objectives. Essays must be well researched and duly footnoted and conform to the guidelines for contributors published in *AIR POWER* Journal and their length should normally be between **4,000 to 6,000 words.**

Serving personnel should forward their entries through proper channels. Advance copies may be sent to the Director, Centre for Air Power Studies. But they will be considered subject to current rules applicable in such cases.

The **First Prize**, donated by Air Chief Marshal O.P. Mehra PVSM, former Chief of the Air Staff, will consist of a cash award of Rs.10,000/- for the best essay as judged by an independent panel of referees. A **Second Prize** consisting of books worth about Rs.5,000/- on strategic and security issues will be awarded to the author of the next best essay. The names of winner(s) of the Essay Competition will be published in *AIR POWER* Journal. Essays found suitable may also be published in the Journal. *AIR POWER* reserves the right not to make any award without ascribing any reason.

All essays should be sent to:

Director
Centre for Air Power Studies,
Arjan Path, Subroto Park,
New Delhi-110010

Last date to receive entries: **September 30, 2007.**

Entries may also be sent via electronic mail at **airpowerindia@yahoo.co.in** In such cases, a hard copy along with a disc must be sent by post.

AIR POWER is pleased to anounce the results of the

ANNUAL ESSAY COMPETITION - 2006

On the theme of

**"Strategic Role of Air Power
How should we think, plan, equip
and train for it in the coming years"**

We appreciate the enthusiastic response. An independent evaluation panel examined the entries and found them to be highly competitive. According to their combined assessment:

First Prize, donated by Air Chief Marshal O.P. Mehra PVSM, former Chief of the Air Staff, goes to:

Group Captain Arjun Subramaniam
Defence Services Staff College, Wellington (Nilgiris)

Second Prize, donated by Knowledge World, is awarded to:

Group Captain A.S. Bahal VM
College of Air Warfare
Secunderabad

Our heartiest congratulations to the winners.

NOTES FOR CONTRIBUTORS

Articles submitted to Air Power Journal should be original contributions and should not be under consideration for any other publication at the same time. If another version of the article is under consideration by another publication, or has been, or will be published elsewhere, authors should clearly indicate this at the time of submission.

Each typescript should be submitted in duplicate. Articles should be typewritten on A4/ Letter paper, on one side only, **double-spaced (including the notes)** and with ample margins. All pages (including those containing only diagrams and tables) should be numbered consecutively.

There is no standard length for articles, but 5,000 to 8,000 words (including notes and references) is a useful target. The article should begin with an indented summary of around 100 words, which should describe the main arguments and conclusions of the article.

Details of the author's institutional affiliations, full address and other contact information should be included on a separate cover sheet. Any acknowledgements should be included on the cover sheet as should a note of the exact length of the article.

All diagrams, charts and graphs should be referred to as figure and consecutively numbered. Tables should be kept to a minimum and contain only essential data. Each figure and table must be given an Arabic numeral, followed by a heading, and be referred to in the text.

Articles should be submitted on high-density 3~ inch virus free disks (IBM PC) in rich text format (RTF) together with **an exactly matching double-spaced hard copy** to facilitate typesetting; notes should be placed at the end of each page. Any diagrams or maps should be copied to a separate disk separately in uncompressed TIF or JPG formats in individual files. These should be prepared in black and white. Tints should be avoided, use open patterns instead. If maps and diagrams cannot be prepared electronically, they should be presented on good quality white paper.

Each disk should be labelled with the journal's name, article title, author's name and software used. It is the author's responsibility to ensure that where copyright materials are included within an article, the permission of the copyright holder has been obtained. Confirmation of this should be included on a separate sheet included with the disk.

Copyright in articles published in *Air Power* rests with the publisher.

STYLE

Authors are responsible for ensuring that their manuscripts conform to the journal style. The Editors will not undertake retyping of manuscripts before publication. A guide to style and presentation is obtainable from the publisher.

Current Journal style should be followed closely. Dates in the form January 1, 2000. Use figures for 11 and above. British spellings are to be used. Authors should provide brief biographical details to include institutional affiliation and recent publications for inclusion in About the Contributors. Sub-headings and sub-sub-headings should be unambiguously marked on the copy.

NOTES

Notes should be **double spaced** and numbered consecutively through the article. **The first line of a note must align with subsequent lines. Each note number should be standard size and have a full point**.

a) References to books should give author's name: title of the book (italics); and the place, publisher and date of publication in brackets.

e.g. 1. Samuel P. Huntington, *The Common Defense* (NY: Columbia UP, 1961), Ch. 2, pp. 14-18.

b) References to articles in periodicals should give the author's initials and surname, the title of the article in quotation marks, title of the periodical (italics), the number of the volume/issue in Arabic numerals, the date of publication, and the page numbers:

e.g., Douglas M. Fox, "Congress and the US Military Service Budgets in the Post War Period," *Midwest Journal of Political Science*, vol. 16, no. 2, May 1971, pp. 382-393.

AIR POWER

Journal of Air Power and Space Studies

Centre for Air Power Studies, P-284, Arjan Path, Subroto Park, New Delhi 110 010

AIR POWER Journal

SUBSCRIPTION FORM

In India   **Abroad**

☐   **Rs. 275/-**   **per copy**   ☐   **$ 35**   **per copy**
☐   **Rs. 1100/-** **per annum (4 Issues)** ☐   **$ 130** **per annum (4 Issues)**

PLEASE PRINT

Name ....

Complete Address ....

....

....

....**Pin** ....**Phone** ....

Please find enclosed cheque/draft number: ....
favouring KW Publishers Pvt. Ltd., drawn on bank:

dated: ....**for amount** ....

Please mail this form to: **KW Publishers Pvt. Ltd., 5A/4A, Ansari Road, Daryaganj, New Delhi 110 002**