



# ***AIR POWER***

**Journal of Air Power and Space Studies**

Vol. 6 No. 4, Winter 2011 (October-December)



## **AIR POWER**

CENTRE FOR AIR POWER STUDIES

New Delhi

*AIR POWER* is published quarterly by the Centre for Air Power Studies, New Delhi, established under an independent trust titled Forum for National Security Studies registered in 2002 in New Delhi.

### **Board of Trustees**

Shri **M.K. Rasgotra**, former Foreign Secretary and former High Commissioner to the UK **Chairman**  
Air Chief Marshal **O.P. Mehra**, PVSM, former Chief of the Air Staff and former Governor Maharashtra and Rajasthan  
Air Chief Marshal **S.P. Tyagi**, PVSM AVSM VM, former Chief of the Air Staff  
Smt **Vijayalakshmy K Gupta**, Secretary (Defence Finance) Ministry of Defence 139 South Block New Delhi.  
Dr. **Sanjaya Baru**, former Media Advisor to the Prime Minister and currently Editor, *The Business Standard*  
Captain **Ajay Singh**, Jet Airways, former Deputy Director Air Defence, Air HQ  
Air Commodore **Jasjit Singh**, former Director IDSA

### **Managing Trustee**

*AIR POWER* Journal welcomes research articles on defence, military affairs and strategy (especially air power and space issues) of contemporary and historical interest. Articles in the Journal reflect the views and conclusions of the authors and not necessarily the opinions or policy of the Centre or any other institution.

**Editor-in-Chief**

Air Commodore Jasjit Singh AVSM VrC VM (Retd)

**Assistant Editor**

**Distributor**

KW Publishers Pvt. Ltd.

All correspondence may be addressed to

Assistant Editor

*AIR POWER*

Arjan Path, Subroto Park, New Delhi 110 010

Telephone: (91.11) 25699131-32 Fax: (91.11) 25682533 e-mail: [diroffice@aerospaceindia.org](mailto:diroffice@aerospaceindia.org)

website: [www.aerospaceindia.org](http://www.aerospaceindia.org)

© Centre for Air Power Studies

All rights reserved. No part of this publication may be reproduced or transmitted in any form or by any means, electronic or mechanical, including photocopying, recording or by any information storage and retrieval system without written permission from the Director, Centre for Air Power Studies, New Delhi

ISBN: 81-87966-30-0

*AIR POWER* Journal is published four times a year and is distributed by

**KW Publishers Pvt. Ltd.**

4676/21, First Floor, Ansari Road, Daryaganj, New Delhi 110 002

Telefax: 23263498 e-mail: [knowledgeworld@vsnl.net](mailto:knowledgeworld@vsnl.net)

Printed and Published by Air Cmde Jasjit Singh (Retd) on behalf of the Forum for National Security Studies (the Trust running the Centre for Air Power Studies, New Delhi) and Printed by Rajkamal Electric Press, Plot No. 2, Phase IV, HSIIDC, Kundli 131028, Sonapat, Haryana and Published at P-284, Arjan Path, Subroto Park, New Delhi 110 010. Editor: Air Commodore Jasjit Singh (Retd).

RNI REGN No. DELENG/2006/18450

# CONTENTS

Vol. 6 No. 4, Winter 2011 (October-December)

**Editor's Note** VII

**1.. HOW TO MINIMISE THE PROLIFERATION IMPACT OF NUCLEAR DETERRENCE** 1

Nuclear deterrence has come to be recognised as possibly the only, if somewhat shaky, defence against the threat and use of nuclear weapons. Hence, most countries have sought to justify their acquisition of nuclear weapons as critical to their security, mostly from nuclear armed countries, but also from the large conventional forces of the perceived adversary. In other words, here lies the critical source of nuclear proliferation. Professor **Sverre Lodgaard**, one of the world's leading experts in this field, in his excellent essay, has explored how the negative impact of nuclear weapons for security can be reduced, leading to minimising the impact on greater proliferation.

**2. PATTERNS OF INSURGENCY: STRATEGIES AND DOCTRINES** 29

Insurgency is a term often mixed up with terrorism, militancy and other societal violence. These have existed for centuries though the means and methods employed have undergone marked changes. But the most important aspect—as, indeed, in the case of regular force-

on-force warfare—in understanding the phenomena and dealing with them, emerges from the doctrines and strategies of insurgencies which vary in time and space. Group Captain **A. V. Chandrasekaran** has tried to unravel the patterns of insurgency, based on exactly these factors. Those involved in counter-insurgency would need to pay particular attention to the doctrines and strategies that differentiate various insurgencies and even provide the insights to changes in ongoing insurgencies.

**3. EFFECT OF WEATHER AND TERRAIN ON AIRLIFT OPERATIONS 51**

Airlift operations are subject to numerous adverse and favourable factors that air power in general experiences. The effect of weather and terrain would inevitably require attention in planning and executing air operations in general and airlift operations in particular. Group Captain **A. K. Chordia** has examined both these factors at some length in the present study which would be useful for operators and planners since India presents a wide variation (and even unpredictability) in both weather as well as terrain.

**4. TRAINING FUTURE ENVIRONMENT LEADERS 81**

Every type of environment requires leadership of somewhat different qualities and characteristics as much as the challenges and responses that the leaders must address would be different, at least in the details and nature. Group Captain **Manoj Kumar** has objectively explored these challenges and suggested the approach to master them for the designated task and objective.

**5. POLITICAL ISLAM, DEMOCRACY AND ARAB SPRING 105**

The last year has been witness to substantive political and ideological developments in the countries across Northern Africa though these developments have acquired the title of “Arab Spring.” Most of the countries affected by the recent turmoil were ruled by an authoritarian

system headed by dictators; and, inevitably, the overthrow of these was interpreted as a desire for democracy. Commodore **M. R. Khan**, an expert in Islam and the Arab region, has analysed the relationship of Islam and democracy with the political upheaval where even NATO air forces took sides in supporting the rebels in their violent struggle against the rule of Muammar Gaddafi in Libya.

**6. NUCLEAR DOCTRINE AND DETERRENCE: 129**  
**A CHINESE PERSPECTIVE**

China acquired nuclear weapons and carried out the first test in 1964 when it also broadly declared that it would not be the first to use them, a posture that it has maintained over the decades. But, except in very recent times, in all this period, China has not been involved in any public discussion about its view of its doctrine or about deterrence which obviously exercised its government for decades, especially against both the superpowers, with the huge size and quality of nuclear arsenals. **S. Rajasimman** examines the Chinese perspectives on the issues connected with nuclear doctrines and deterrence.

**7. THE RISE OF CHINA AND SOUTH KOREA'S 153**  
**STRATEGIC FLEXIBILITY**

The phenomenal rise of China, with its two-digit economic growth over nearly three decades and its massive military modernisation especially since 1993, when it started to access Russian modern military technology, has naturally raised interest and even strategic uncertainty on how China would use its newly acquired power. Inevitably, these issues have far greater salience for the Asian neighbours of China. Ms. **Yeon Jung Ji** examines the rise of China and the degree and direction of flexibility available/possible to South Korea, especially given China's support for the Communist dictatorial regime in North Korea.



## EDITOR'S NOTE

The selection and contract for the MMRCAs (Medium Multi-Role Combat Aircraft) has eventually moved closer to the contract stage though there is many a slip between the cup and the lip. The publicly known information on the commercial bids indicates that the two aircraft down-selected—the 4-nation European consortium Cassidian's Eurofighter and the French Dassault's Rafale—are likely to carry costs within 5 percent of each other. But it is not clear whether this is for the unit cost of the aircraft or the life-cycle cost. Low unit costs do not necessarily translate into lower life-cycle costs even where the total life span is taken as equal. The evaluation process on this critical score is now going on and it is generally believed that the final decision and contract would be concluded by the end of this financial year.

On the other hand, what happens if there is a significant difference in life-cycle costs of the two down-selected aircraft? This may well require re-examining the whole process due to four reasons: (i) performance would remain very important but we should reach a situation where the best becomes the enemy of the good; (ii) affordability of defence systems in general and combat aircraft in particular, remains an important factor even where performance must be given the right of being most important. For a developing country like India, on the cusp of rising to greater power primarily on its economic performance, this remains important in view of the global economic pressures emanating from the US' and Europe's Euro-zone debt crises. This is already impacting negatively on the Indian

economic growth rate where a nearly 20 percent drop in the value of the rupee against the US dollar in one year is already visible; (iii) access to technology must remain a key objective when we buy high-value systems like combat aircraft, and this must be measured in terms of not only the specific technology for technology's sake, but for our ability to leverage and harness it for future utilisation; (iv) sustainability would remain very important when the selected aircraft enters service. And the question must be asked: sustainability at what cost? Simple arithmetic would show that a sustained 75 percent serviceability produces twice the number of aircraft for operational employment (the real purpose of acquiring them in the first place) with an average of 35 percent serviceability, not counting the costs on cannibalising, etc.

In the ultimate analysis, credible affordable systems for defence are crucial for a country like ours. Most countries have acquired higher technology weapons by reducing the quantum of manpower and its costs. India is unique in that of all the possible manpower employment models, we have adopted the most inefficient since the 1970s. We all watch China's growth and military modernisation with great interest. But most of us do not look closely at the drastic reduction in military manpower that it has achieved in order to be able to acquire a fourth generation air force and experiment at the edge of fifth generation systems.

# HOW TO MINIMISE THE PROLIFERATION IMPACT OF NUCLEAR DETERRENCE

SVERRE LODGAARD

## THE IMPACT OF NWS POLICIES

In his April 2009 speech in Prague, President Obama declared that the United States will “seek the peace and security of a world without nuclear weapons”. At the same time, he pledged that “as long as nuclear weapons exist, a safe, secure and effective arsenal will be maintained to deter potential adversaries”.<sup>1</sup>

If deterrence is the unavoidable twin of nuclear weapons, is its impact on nuclear proliferation unavoidable? From time to time, it has been argued that acquisition of nuclear weapons by more states is a regional matter, driven by regional conflicts and security concerns. This claim absolves the Nuclear Weapon States (NWS) of responsibility for nuclear proliferation, so another question has to be answered first: is there a connection between the

---

\* Mr **Sverre Lodgaard** is a Senior Research Fellow at the Norwegian Institute of International Affairs.

1. Obama’s April 2010 Nuclear Posture Review (NPR) says “The fundamental role of US nuclear weapons, which will continue as long as nuclear weapons exist, is to deter nuclear attack on the United States, its allies and partners”. The NPR does not go as far as no first use, but commits the Administration to “work to establish conditions under which such a policy (of no first use) could be safely adopted”, Department of Defence, April 6, 2010.

**A credible movement in the direction of nuclear disarmament would facilitate the management of the non-proliferation regime.**

nuclear postures of the NWS and the propensity of others to acquire nuclear weapons?

There are two broad kinds of answers to this question. First, the nuclear Non-Proliferation Treaty (NPT) is based on the assumption that there is a substantial connection between them. A credible movement in the direction of nuclear disarmament would facilitate the management of the non-proliferation regime. The modalities of that influence have been thoroughly analysed elsewhere<sup>2</sup> and will not be replicated here.

Second, the big power policies also affect the nuclear decision-making of Non-Nuclear Weapon States (NNWS) in a variety of other ways. They shape the *security environment* of potential proliferators. Recently, the main antagonists of the Cold War have geared their military policies less to each other and more to regional settings, notably to the Middle East, Central Asia and East Asia. This century, all P-5, except China changed their doctrines to enhance the utility of nuclear weapons in regional contexts. First of all, the focus has been on the Middle East, where Israel had acquired nuclear weapons by the end of the 1960s in response to Arab threats. There, the nuclear proliferation issue has been embedded in the regional conflict dynamics ever since, and it has become increasingly intertwined with big power politics. Also, in other parts of Asia, there is an international as well as a regional dimension to the proliferation problem. The NWS have it in their power to twist the proliferation problems for better or worse.

The same powers also influence the *political environment* of potential proliferators by projecting the status value that they attach to nuclear weapons. They have done so by maintaining and modernising big nuclear arsenals and by underlining the importance of nuclear weapons in their doctrines and statements. Some of them have been outspoken about the pride they take in their nuclear weapon achievements. This century,

---

2. Steven E. Miller "Proliferation, Disarmament and the Future of the Non-Proliferation Treaty", in Morten Maerli and Sverre Lodgaard, eds., *Nuclear Proliferation and International Security*. (Abingdon and New York: Routledge, 2007).

their policies endangered the entire non-proliferation regime. The US, in particular, weakened the non-proliferation norm by buying selectively into the provisions of the NPT. The Obama Administration changed that in support of the NPT and its disarmament dimension, and to the extent that it succeeds, it projects a diminishing belief in the political value of nuclear arms.

Whatever happens to the call for a Nuclear Weapon-Free World (NWFV), the thesis that proliferation is driven by regional conflicts and has little or nothing to do with the nuclear policies of the big powers is wrong. It was wrong in the past, and the focus on regional politics has made it even more so in recent years. To claim, as NWS sometimes do, that all of this “is inconsequential in the difficult and agonising deliberations of a government to go nuclear is far removed from political realism”.<sup>3</sup>

The question to be discussed in the following emanates from this assertion. It centres on the doctrinal dimension of nuclear postures and relates to the second part of the Obama quote: *will maintenance of nuclear deterrence all through the disarmament process detract from the non-proliferation impact of nuclear build-down and, if so, how can that effect be minimised?*

## DETERRENCE

The nuclear doctrines have always centred on deterrence. They have come in many different forms. One of them is deterrence by Mutually Assured Destruction (MAD). During the Cold War, all the NWS adopted this logic although operationally, they gave very different meanings to it. The United States and the Soviet Union built enormous forces to guarantee unacceptable destruction; China, France, and the United Kingdom introduced notions of sufficiency and minimal deterrence.

Deterrence of strong conventional forces is another function. For the United States, this goes back to the Soviet blockade of West Berlin in 1948 and what it might take to defend the city. In the face of superior Soviet

---

3. Harald Muller, 'The Future of Nuclear Weapons in an Interdependent World', *The Washington Quarterly*, vol. 31, no. 2, 2008.

**Russia discarded the Soviet declaration of no-first-use of 1982 and adopted the Western first-use policy.**

conventional forces, use or threats of use of nuclear weapons were deemed necessary to maintain access to the city and to defend it. First use became a crucial part of the North Atlantic Treaty Organisation (NATO) strategy from the inception of the alliance, and led to the deployment of thousands of tactical nuclear weapons in Europe.

This function also outlived the Cold War, but now the tables were turned: it was Russia's turn to be conventionally inferior and to raise the role of nuclear weapons to compensate for weakness. Russia discarded the Soviet declaration of no-first-use of 1982 and adopted the Western first-use policy.<sup>4</sup> For Israel, deterrence of Arab conventional forces has always been the essence of its nuclear policy, along with a determination to maintain nuclear monopoly in the Middle East. Later, the role of Pakistan's nuclear weapons also came to centre on first-use, deterring India from making deep intrusions into its territory.

A third function was that of nuclear war-fighting, contemplating nuclear exchanges between the USA and the USSR, involving thousands of nuclear weapons back and forth, as if nuclear war could be similar to conventional war and be lost or won. Even without actual war, the theoretical possibility of victory was thought to translate into political advantage: this was one of the perceived lessons of the Cuban missile crisis. Even in the absence of any expectation of waging large-scale nuclear war, both powers, therefore, went for demonstrated capabilities to win or at least deny victory to the other party. These plans, which could justify whatever number of weapons – about 10,000 deployed strategic nuclear weapons on each side during the height of the Cold War – were among the worst excesses of the Cold War.

---

4. The Soviet declaratory policy of NFU had little credibility anyhow, as long as large numbers of tactical nuclear weapons were deployed along the dividing line in Europe. Oleg Grinevsky cites the former head of the Soviet General Staff, Marshall Nikolay Ogarkov, "We are not about to wait when we are attacked. We ourselves will attack if we are forced to and when we find initial indications of a NATO nuclear assault... We have the right to consider it as a response even without being under actual missile attack." Oleg Grinevsky, *The Turning Point: From Brezhnev to Gorbachev* (Moscow: Olma-Press, 2004).

A fourth function was that of extended deterrence. The United States maintains extended deterrence postures in cooperation with its allies in Europe and East Asia. The end of the Cold War changed the weapons configurations in these regions<sup>5</sup>, but not the essence of the doctrines. The United States keeps the option of being first to use nuclear weapons in response to an attack on its allies, be it an attack by conventional or by unconventional means.

The credibility of this doctrine was always in doubt. At one point, Henry Kissinger warned the European allies not to repeat requests for assurances that the United States could not possibly mean.<sup>6</sup> President Obama's disarmament initiatives triggered renewed debate about extended deterrence at official levels in both Japan and Europe, some leading politicians holding that the role of nuclear weapons should be limited to deterring their use by others. The alliances were not at stake, nor nuclear deterrence: the issue was deterrence of what. Another round of discussion about no-first-use ensued, the third round since 1980.

Finally, there is the notion of existential deterrence. Karl Marx wrote that the most effective power is the structural one which functions without being used. Nuclear weapons function this way. Military strength is an important determinant of the international hierarchy of states, and nuclear weapons are the ultimate expression of strength. States are sensitive to the international hierarchy: consciously or subconsciously, they shape their policies and actions with a view to the power that others can wield, accommodating to those who are high in the hierarchy. Nuclear weapons are unique in their destructive capacity, instilling a sense of awe in the minds of opponents and fostering caution and respect in the minds of

---

5. In Asia, nuclear weapons were withdrawn from Japan and South Korea. About 100 nuclear warheads for Tomahawk sea-launched cruise missiles were retained for deployment in case of emergency. In Europe, successive reductions brought the number of US nuclear weapons down to the low hundreds. Obama's NPR called for elimination of the nuclear-tipped Tomahawks assigned to East Asia.

6. 5. "European allies should not keep asking us to multiply assurances that we cannot possibly mean, or that if we do mean, we should not want to execute because if we execute, we risk the destruction of civilization. Our strategic dilemma isn't solved with reassurances". Henry Kissinger, "The Future of NATO" in K. Myers, ed., *NATO: The Next Thirty Years* (Boulder, CO: Westview Press, 1980).

**Credible NFU doctrines give one function to nuclear weapons and one only: deterring others from using theirs. It follows that nobody would need them if nobody had them.**

others. Their structural impact comes down to what McGeorge Bundy called existential deterrence:<sup>7</sup> stripped of sophisticated doctrines and war plans, nuclear weapons influence others by their sheer existence. They function without being used, just by being there.

In a sense, Obama's statement in Prague – repeated in the April 2010 Nuclear Posture Review (NPR) – was to say the obvious. As long as the weapons exist, there has to be a stated justification for them; that justification has always been put in security terms; and the postulated security gains have been phrased in the language of deterrence. Governments are loath to talk about status motives even if in some cases, getting “a seat at the table” seems to have been the main objective. Reservations made for the path dependence of nuclear disarmament, deterrence will remain the name of the game throughout the process.<sup>8</sup>

### **NO FIRST USE: A MILESTONE**

The next question is, therefore, deterrence in what form? The NPR says that the US will work to establish the conditions for a transition to No First Use (NFU) doctrines. NFU – sometimes referred to as core deterrence – is an important milestone. Credible NFU doctrines give one function to nuclear weapons and one only: deterring others from using theirs. It follows that nobody would need them if nobody had them.

Under credible doctrines of NFU, premeditated use of nuclear weapons is ruled out. Per implication, threats of use are ruled out as well. Apart from whatever status gain continued possession may be seen to yield, their value becomes negative, for there would still be a risk of nuclear war by human or technical error and that risk is first of all a risk for their possessors. If deterrence fails, they will themselves be the targets and prime victims of devastation.

---

7. McGeorge Bundy, *Danger and Survival*. (New York: Vintage Books, 1988).

8. While taking the lead on disarmament matters, Obama reassured his critics that the US deterrent would be second to none.

Therefore, if the NWS adopt NFU postures, the doctrinal part of their postures would no longer incite others to acquire nuclear arms.<sup>9</sup> NFU does not stimulate proliferation by example, for it leaves nothing attractive to emulate. Furthermore, when the weapons become a liability, it adds realism to the disarmament corollary noted above – that nobody would need them if nobody had them. However, while use of nuclear weapons is inhibited by tradition or taboo (see below) and ruled out by doctrines of NFU except in retaliation, possession may still confer status on their owners. There is an intriguing relationship between the software and hardware components of nuclear postures, which William Walker has characterised as “shame in use, glory in possession”.<sup>10</sup>

An NFU agreement could include a provision branding first use of nuclear weapons a crime against humanity. If NFU takes hold by unilateral action, as is more likely, the Security Council could be invited to issue such a declaration. That would send a message to recalcitrant NWS that are not permanent members of the Council, urging them to forego first use on moral grounds. A non-use agreement, on the model of the Geneva Protocol of 1925, would convey the same message: the effects of nuclear weapons are such that no civilised state or sane leader should or would use them. As with the Geneva Protocol, it would in practice be an NFU agreement. So why not phrase this doctrinal milestone as a prohibition of nuclear weapons use?

Prohibition of use is a taller order than NFU. Literally understood, it undercuts deterrence even if indirectly it amounts to the same. Seemingly questioning the right to respond in kind, it puts another hurdle on top of what is required for NFU, making the decoupling of NWS policies from the nuclear considerations of NNWS unnecessarily difficult. Those who favour non-use over NFU usually do so because they *want* to question retaliatory use, and public opinion mobilisation is easier on the basis of non-use than in

---

9. Except for whatever status value that might be accorded to nuclear weapons. Under conditions of NFU, that value would be much reduced if not entirely eliminated. The status aspect is beyond the scope of this paper, however.

10. William Walker, “The Absence of a Taboo on the Possession of Nuclear Weapons”, *Review of International Studies*, no 4, October 2010.

reference to the not so simple logic of NFU. Also, for that reason, it would be harder to accept for the NWS.

Existential deterrence – the notion that the sheer existence of nuclear weapons is enough to deter others, no doctrine or explanation being needed – reflects the same basic thinking, but does not explicitly exclude threats or use against NNWS. To insulate the continued existence of nuclear weapons from the security considerations of NNWS, NFU doctrines are, therefore, better.

For NFU to be credible, the script must be confirmed by matching deployments. In Europe under the Cold War that meant, for instance, withdrawal of tactical nuclear weapons from the frontlines in order not to be tempted to use them before they might be overrun and lost. Today, this is less of a problem. The Presidential Initiatives of 1991/1992 did away with many of them, and others were withdrawn to rear locations. However, these weapons remain numerous, especially in Russia, and so far they have not been included in any disarmament agreement.

NFU means low numbers of weapons in rear positions, but long-range systems can be used with very high accuracy over a range of distances and can be retargeted on short notice, so their use cannot be made unambiguous only in reference to geography and technology. Substantial reductions of force levels would alleviate the problem, but not eliminate it. The credibility of NFU doctrines would have to be judged on the basis of the totality of nuclear-related hardware and software and that, in turn, presupposes a high degree of military transparency. The conclusions will hardly be clear-cut. In practice, there may be shades of grey.

#### **APPROACHES TO NO FIRST USE**

To eliminate the proliferation impact of current nuclear postures, a transition to NFU is, therefore, of the essence. It is a tall order: the US NPR identifies the objective, yet NATO's new strategic concept does not even copy the negative security assurances that the NPR extends to NNWS. What is divisive for NATO is even more difficult for Russia, Pakistan and Israel.

As is so often the case with major undertakings, no single approach will do the trick. A combination of efforts along many different lines – addressing

the historical utility, legality, legitimacy and political order functions of nuclear weapons – is required. This is not the place to discuss them at length, only to draw attention to what they offer.

*History*

Nuclear history may be read as a political struggle over the utility of nuclear weapons, and over the viability of nuclear deterrence in particular. On the one hand, there is a creeping norm of non-use that tends to undermine deterrence. Nina Tannenwald argues that this norm is more than a prudential tradition: it has become a taboo. Traditions are not so strong that people accept them blindly. Taboos, on the other hand, imply an unthinking adherence to the norm.<sup>11</sup> The taboo is a moral conviction: so far, there is no international legal instrument prohibiting the use of nuclear weapons, yet there is the strong impression that by using them one would lose the high moral ground. Civilised nations and sane leaders do not use them first.

Tannenwald argues that policy-makers have come to believe that first use is forbidden. She shows that some US Presidents – Eisenhower and Nixon – felt constrained by domestic and world opinion and that others – Truman, Kennedy and high officials in the George H.W. Bush Administration – came to the conclusion that nuclear weapons were fundamentally unusable. On the other hand, vested interests and believers in the utility of nuclear arms have made recurrent efforts to stem and undermine the norm. New weapons have been developed that would be more thinkable to use, and that would, therefore, more likely be used,<sup>12</sup> and ships and other nuclear weapon platforms have been sent to hot spots around the world in shows of force, instilling respect and awe. These options were curtailed by the

**So far, there is no international legal instrument prohibiting the use of nuclear weapons, yet there is the strong impression that by using them one would lose the high moral ground.**

---

11. "A taboo is also generally associated with such qualities as absoluteness, unthinkingness, and taken-for-grantedness". Nina Tannenwald, *The Nuclear Taboo: The United States and the Non-Use of Nuclear Weapons Since 1945* (UK: Cambridge University Press, 2007), p.11.

12. A well known example being enhanced radiation or neutron weapons.

moratoria on nuclear weapon tests, which made it hard to introduce new types of weapons, and by the US-Soviet/Russian presidential initiatives, which removed tactical nuclear weapons from surface vessels and other platforms. In the beginning of this century, nuclear weapon proponents raised the relevance of nuclear arms once more by adopting doctrines that envisage a much wider range of situations in which nuclear weapons might have a role. Obama took a step back again by extending unconditional negative security assurances to NNWS in good standing under the NPT, reservations made for developments in the biological weapons sector.

Under current doctrines, it remains the legitimate role of the military to make plans for the use of nuclear weapons beyond retaliatory use.<sup>13</sup> Furthermore, the US and others still consider it legitimate to threaten to use nuclear weapons first. Throughout the nuclear age, the United States has issued nuclear threats in some shape or form more than 20 times, apparently in the belief that they might function as intended.<sup>14</sup> To the extent that the taboo exists, it applies to use in war and not to threats of use. All the time, moreover, the importance of nuclear weapons is emphasised in speeches made by state leaders and other high officials. The norm of non-use is, therefore, less than a taboo. Under the impact of Obama's disarmament drive and NPR, it has been strengthened, but the continuation is open to doubt. From a non-proliferation point of view, the problem with all of this is that it keeps telling others how important nuclear weapons are. In upholding the utility of nuclear weapons for themselves, the NWS are teaching others the same lesson.

However, the postulated utility of nuclear weapons has probably been much inflated. Naturally, the NWS have done their best to maximise the military and political returns on their investments. Fortunately, some of the most glaring exaggerations have receded. The nuclear war-fighting doctrines that were among the most bizarre products of the Cold War have been toned down, if not totally laid to rest. The credibility of the US' extended deterrence doctrines is questioned more than ever before.

---

13 Even China may be doing so, its NFU policy notwithstanding, for that policy is believed not to apply to territories that it considers as its own (Aksai Chin and part of Arunachal Pradesh).

14 Daniel Ellsberg, "Roots of the Upcoming Nuclear Crisis" in D. Krieger, ed., *The Challenge of Abolishing Nuclear Weapons* (New Brunswick and New Jersey: Transaction Publishers, 2009).

It has been customary to ascribe the Japanese surrender in 1945 to the bombing of Hiroshima and Nagasaki: it turns out that the Soviet declaration of war on Japan and its sweeping offensive in Manchuria were more important.<sup>15</sup> Shows of force and threats of nuclear weapon use may or may not have worked: in most cases, the effects can neither be proved nor disproved. Realistic reviews of nuclear history in these respects, deleting the propagandistic arguments to uphold deterrence and justify investments in huge arsenals, can do much to reduce the attractiveness of nuclear weapons and nuclear deterrence and so contribute to non-proliferation.

The nuclear threat that was levelled at Iraq in connection with the first Gulf War illustrates the complexities and ambiguities of nuclear weapon threats. In delivering a warning letter to Iraqi Foreign Minister Tariq Aziz, Secretary of State James Baker said, "I purposely left the impression that the use of chemical or biological agents against Israel could invite tactical nuclear retaliation."<sup>16</sup> President Bush says in his memoirs that he had "privately decided" not to do so: in his own mind, the threat was, therefore, a bluff.<sup>17</sup> However, William Arkin's interviews with Iraqi officials left him in no doubt that Saddam Hussein and his government believed the United States was prepared to use nuclear weapons if Iraq used chemical weapons against coalition forces or against Israel.<sup>18</sup>

Another reading points in a different direction. Baker's letter also warned Aziz that if Iraq used chemical or biological weapons, supported terrorist attacks, and burnt Kuwaiti oil fields, the US objective "won't just be

---

15 Berry, Lewis, Pélopidas, Sokov and Wilson, *Delegitimizing Nuclear Weapons. Examining the Validity of Nuclear Deterrence* (James Martin Centre for Nonproliferation Studies, 2010).

16. James Baker, *The Politics of Diplomacy* (New York: Putnam, 1995).

17. G.H.W. Bush, *All the Best, George Bush: My life in Letters and Other Writings*. (New York: Scribner, 1999).

18. William Arkin, "Calculated Ambiguity: Nuclear Weapons and the Gulf War," *The Washington Quarterly*, Issue 4, 1996.

the liberation of Kuwait, but elimination of the current Iraqi regime.”<sup>19</sup> Two of these three actions were actually taken by the Iraqis during the last days of the war, which perhaps implies that they were not deterred from using chemical weapons either. So why did the Iraqi leaders say that the nuclear threat deterred them from using chemical and biological weapons? Joseph Fitchett cites an unnamed Arab diplomat: “The regime had to explain to its military commanders why it was pulling back from the brink, so it looked a lot better to say that it was sparing the Iraqi people from nuclear holocaust than to admit that the leaders were worried about their own skins”.<sup>20</sup>

However, Baker believes the calculated ambiguity about the response was part of the reason why Iraq did not use its chemical and biological weapons. To him and others, the utility of nuclear threats, therefore, appeared to be confirmed. Whether that interpretation was correct or not, whatever chance there might have been for the United States to adopt a policy of no first use shortly after the dissolution of the Warsaw Pact and the Soviet Union, it effectively disappeared with this experience. It took the US twenty years to bring it to the fore again.

### *Legality/Illegality of Nuclear Weapon Use*

The NNWS are more vulnerable to use and threats of use of nuclear weapons than the NWS. Where mutually assured destruction applies, resort to nuclear weapons is an ordained act of suicide, while in relation to the NNWS, the aggressor may get away with it. Non-aligned states have, therefore, called for an international convention committing the NWS not to use or threaten to use nuclear weapons against NNWS parties to the NPT, no qualifications added. While Obama’s NPR may lead to a new Security Council (SC) resolution containing stronger security assurances than does Resolution 984,<sup>21</sup> it takes more to meet the non-aligned demand for an international convention.

NFU doctrines meet the same concerns. In addition, they are more relevant in deep cuts and elimination scenarios because of their in-

---

19. Baker, n.16.

20. Joseph Fitchett, “Threat of Annihilation Deterred Iraq, They Say,” *The New York Times*, 1995.

21. So far, however, the US assurances have not been emulated by anybody else.

built disarmament logic. Negative security assurances to the NNWS are primarily a part of the non-proliferation bargain: NFU would be a major contribution to both disarmament and non-proliferation.

The Geneva Protocol of 1925 prohibited the use of chemical and biological weapons. These weapons were considered inhumane. Later, possession of them was outlawed as well: biological weapons by the Biological Weapons Treaty (BWT) of 1972; chemical weapons by the Chemical Weapons Convention (CWC) of 1992.

The CWC set a timeline for destruction of the arsenals, and agreement was reached on a comprehensive verification system. In the 1990s, a verification protocol was negotiated for the BWT as well, but the Bush Administration turned it down.

Stressing that any use of nuclear weapons must be compatible with international humanitarian law, the International Court of Justice (ICJ) Advisory Opinion of 1996 came close to a non-use position also for these weapons. The effects of nuclear arms are such that it is hard to imagine circumstances in which they could be used without colliding with humanitarian law.<sup>22</sup> If the use is illegal, threats of use are illegal as well.<sup>23</sup> However, unlike illegal use, threats of use are not punishable under international law.<sup>24</sup> A protocol banning the use of nuclear weapons, on the model of the Geneva Protocol, would convey the same message: the effects of nuclear weapons are such that no civilised state should or would use them.

#### The ICJ Advisory Opinion ended on an understatement: use of nuclear

22. The court said, "In fact, (the use of nuclear weapons) seems scarcely reconcilable with respect for (the requirements (of) international law." "Scarcely" appears to be an understatement. Nevertheless, the court could not agree on the legality of use in situations where national survival is at stake (as in the case of Israel). It failed to rule out the use of nuclear weapons in such circumstances.
23. "The notions of 'threat' and 'use' of force under Article 2, paragraph 4, of the UN Charter stand together in the sense that if the use of force itself in a given case is illegal – for whatever reason – the threat to use force will likewise be illegal" (para. 47).
24. Ståle Eskeland, *Internasjonale forbrytelser*. (Oslo: Universitetsforlaget, 2011).

weapons is “scarcely” reconcilable with respect for the law. The court was unable to definitely conclude that nuclear weapons use would be unlawful in all circumstances, such as the use of small weapons against naval targets in desolate ocean areas. But can it ever be reconcilable in practice? Isn’t that possibility of hypothetical interest only? In this respect, there may be scope for further consideration of nuclear weapons and international law.

What about first use when national survival is at stake? In 1996, the ICJ was evenly split. The permissibility of it was argued with the case of Israel in mind. Today, Pakistan could be added, and possibly Russia and even China. The Russian doctrine of 2010 allows for employment of nuclear arms when “the very existence (of Russia) is under threat” (Sokov 2010), and China’s NFU policy may not apply if its own territory, or territories that it claims as its own (such as Taiwan and Arunchal Pradesh), are under threat. The fear in these huge state conglomerations is that dismemberment, even on a small scale, might be the beginning of national breakdown. If all of this is allowed under international law, does it not need an update? In all likelihood, such use would be contrary to international humanitarian law.

The best approach to NFU may be a gradual one in the form of unilateral commitments as soon as more NWS are ready for it. However, for the norm of NFU to become a taboo, it has to become a legal prohibition signed by all of them.

### *Legitimacy/Illegitimacy of Nuclear Weapon Use*

Similar to the Advisory Opinion of the ICJ, which held that the threat or use of nuclear weapons would generally be contrary to the principles and rules of humanitarian law, public opinion is distinctly negative to the use of nuclear arms. A six-country poll from 2007 showed that in the Western NWS, 40-50 per cent thought that the use of these weapons would never be justified. In the US, 20 per cent said the threat of use would be justified as a deterrent of possible, attack while in the UK and France, 29 and 37 per cent were of that view. In Italy and Germany, 70 and 77 per cent respectively said that use of nuclear weapons by NATO

would never be justified. Only in Israel did those who consider that use might be justified outnumber those who said it would never be.<sup>25</sup>

The NWS elites take a more positive view of the utility of nuclear arms. Among the staunchest believers in the utility of nuclear weapons are the employees of the nuclear weapon establishments, whose jobs depend on the maintenance of significant nuclear weapon systems. More than others, they are the ones who have to be eclipsed on the way to an NFU and NFWF. Nuclear history shows that initiatives and pressures for restraint and disarmament have come from top leaders as well as public opinion, but quite often they have been undermined and neutralised by vested bureaucratic interests and inertia.

Similar to the legal attempts to outlaw nuclear weapons use, public opinion mobilisation against it is also based, first and foremost, on humanitarian considerations (along with proliferation costs, opportunity costs and rejection of the military and political utility of nuclear weapons). They derive from the same fundamental concerns and are, therefore, mutually reinforcing. Both communities – the legal and the humanitarian – can give an extra spin to the synergism by stressing the inhumane and indiscriminate effects of nuclear weapons.

The humanitarians have some recent successes to refer to, the landmines and cluster munitions conventions in particular. In the processes leading up to these agreements, they built coalitions; they were goal-oriented; and they went for majority decisions rather than consensus texts on more modest measures. Arms controllers are known for the latter. The Geneva Conference on Disarmament is consensus stricken.

The International Campaign to Abolish Nuclear Weapons (ICAN) builds on this experience and on the lessons from chemical and biological weapons disarmament. ICAN's main objective is to outlaw the use of nuclear weapons and promote an international convention for disarmament to zero.

There is much to speak for in that approach. However, the limitations should also be understood. Nuclear weapon issues are issues of high

25. Source: The Simons Foundation / Angus Reid Strategies. Methodology: Online interviews with 1,000 adults in Britain, France, Germany, Israel, Italy, and the United States, conducted from July 26 to August 8, 2007. Margin of error for each country is 3.1 per cent.

politics, i.e. they belong to the innermost sanctum of state interests. High politics – covering all matters that are vital to the survival of the state – has been present in all cultures and at all times, but the term was coined during the Cold War. The advent of the atomic bomb made it clear what it was ultimately all about. For the NWS, nuclear deterrence became the core element of survival, and for all its limitations and flaws, it so remains. When reviving the objective of an NFWF, Obama, therefore, put the world on notice that as long as nuclear weapons exist, the US will maintain a nuclear deterrent. The salience of landmines and cluster munitions is in a different category, way below that accorded to nuclear arms.

Landmines and cluster munitions have, moreover, been in the hands of many governments while nuclear weapons have been acquired by a few. Majority conventions eliminating anti-personnel weapons, therefore, made sense: the inventories of many states are now being destroyed and more states may accede later on. A nuclear weapons convention, on the other hand, does not have the same prospect as long as the NWS oppose it. If initial support for a convention is limited to the NNWS, no nuclear weapon would be dismantled as a consequence. The convention would follow the NPT distinction between haves and have-nots and, in essence, repeat the disarmament obligation of Article VI of the NPT.

The effects of nuclear weapons are also much different from those of chemical munitions, however, often they are lumped into the same category of Weapons of Mass Destruction (WMDs). On occasion, chemical agents have been used as weapons of terror, but they have not been effective means of war. Therefore, chemical weapons were never integrated into the military forces the way nuclear weapons are. The relevance for nuclear disarmament of the non-use/elimination sequence of chemical weapons must, therefore, be qualified.

The history of biological weapons reinforces that reservation. Biological weapons were part of the same 1925 non-use protocol. US and Soviet stocks were slated for elimination in 1972, when the superpowers concluded a treaty

to this effect.<sup>26</sup> The treaty was easily agreed and there were no verification provisions, for, like chemical weapons, biological weapons were considered useless. This has changed, however. In recent years, revolutionary developments in biological research are raising new possibilities for weapons applications. What it will come to is unclear, but in extending unconditional negative security assurances to the NNWS the US made a reservation for unforeseen developments in the biological field. It all comes back to the point about chemical weapons and high politics made above: it is only when an entirely new spectrum of military applications emerges that the biological sector begins to affect nuclear planning, and then the 1972 BW Treaty may no longer be of interest. As inspiration and model for nuclear disarmament, the experiences from the chemical and biological sectors are, therefore, of limited value.

**A transition to NFU is more of a problem for Russia and the Western NWS – the Cold War antagonists – than for the emerging powers in the East.**

### *Power Politics*

A transition to NFU is more of a problem for Russia and the Western NWS – the Cold War antagonists – than for the emerging powers in the East. China sticks to a doctrine of NFU; India declared a policy of NFU when it tested, but later emulated the US and added deterrence of chemical and biological weapons to the role of nuclear weapons. However, inspired by Obama's disarmament drive, India has revived its radical disarmament ambition, which is now pursued in parallel with the pragmatic arms control approach that was adopted after the tests in 1998. It hardly takes much to move it back to NFU.

In an exchange of letters between the Chinese and Russian heads of state of 1994, these countries committed themselves to NFU in relation to each other. When the big powers are ready for *de jure* recognition of India as an NWS – and sooner or later, they will be – a triangular NFU commitment between the Asian giants will be possible. So in contemplating a gradual

---

26 The US complied with it. When the Cold War was over, it turned out that the Soviets had not destroyed their stocks.

approach to universal NFU commitments, there is much to build on: an existing Chinese commitment; an Indian policy which may revert to NFU; a Russian NFU commitment in relation to China; and a US declaration of intent to establish the conditions for transition to NFU.

To reduce Russia's reliance on nuclear weapons, threat perceptions must be alleviated. The US accounts for 45 per cent of world military expenditures; Russia for 3 percent; so to wait for stronger conventional forces to reduce the role of nuclear weapons makes little sense. For the West, that means policies that can ease tensions along Russia's borders in Europe, the Caucasus and Central Asia. When Obama pushed the "reset button" to improve relations with Russia, US policy got closer to that of the big West European countries, but caused anxiety in Eastern Europe. Three different political cultures are at work: a Western European culture where Germany is the heavyweight, disposed for closer cooperation with Russia, depending on political and economic developments there: an East European culture still marked by its recent history of subordination to the Soviets, but gradually moving closer to the rest of the European Union (EU); and an American culture, which currently translates into policies that are sensitive to Russian concerns, but which has controversial elements. The first one seems rather stable and predictable. The second one is likely to swing back and forth on the way to closer EU integration. US culture bodes for political shifts of much greater consequence.

Pakistan is a bigger challenge. It is prepared for first use to stop deep Indian incursions into its territory. To turn the conventional imbalance into a force relationship where the defensive capabilities on both sides are stronger than the offensive capabilities on the other – a stable non-provocative relationship – is beyond grasp. And as long as the territorial conflict over Kashmir exists, confidence building is a Sisyphean activity. Still, threat reduction is the more realistic approach also in this case. Similar to Russia's relationship with the West, Pakistan will remain militarily inferior to India, so the way to a Pakistani NFU doctrine goes via resolution of the Kashmir problem and alleviation of threat images. Of course, regional force adjustments can also facilitate a Pakistani transition to NFU.

Israel is the hardest problem. It does not admit to having nuclear weapons, but the existence of a nuclear arsenal – the only one in the Middle East – is well known. To maintain its monopoly, the Begin doctrine raises the option of bombing weapons-related facilities in other Middle Eastern countries. An Iraqi reactor was bombed in 1981; an alleged nuclear reactor under construction in Syria was bombed in 2007; and a military attack on Iran is not ruled out. Since it does not admit to being an NWS, no policy for nuclear weapon use has been promulgated. However, the purpose seems obvious: nuclear weapons may be used to stem advancing conventional forces, as a means of last resort if national survival is at stake.

**The Israelis say they are ready for a nuclear weapon-free zone when peace has become a stable prospect, i.e. when all else has been solved. In the Middle East, that is a long-term ambition.**

The Israelis say they are ready for a nuclear weapon-free zone when peace has become a stable prospect, i.e. when all else has been solved. In the Middle East, that is a long-term ambition. In Northeast Asia, the predicament is much the same. There, too, there is a long way to go before all else has been settled, and until then, the regime in Pyongyang may want to retain a nuclear deterrent as an ultimate insurance premium, like the Israelis.

The smallest and weakest NWS are, therefore, among the hardest to convert to NFU and nuclear disarmament. In the Middle East, South Asia and Northeast Asia, it can only be achieved through regional peace arrangements. To succeed, major power support is needed.

#### THE MEANING OF ZERO

Words like *zero*, *elimination*, and *abolition* all have in common the idea of no nuclear weapons. However, *zero* can be conceived of in a variety of ways, and not everyone means the same when referring to it. It may be taken to mean no deployed weapons; no stockpiled weapons; no assembled weapons; no nuclear weapons in the hands of the military (but possible under civilian governmental control as an insurance premium); or no national nuclear weapons (but possibly nuclear weapons controlled by an international body).

Beyond the various meanings of zero, the vision of an NFWW also comes in several other forms, one of which imagines a world where all ready-made weapons have been eliminated, but where many states maintain a mobilisation base for reintroduction of them. It might include fissile materials in stock, able nuclear weapon engineers and manufacturing equipment on hand, and delivery vehicles ready for use. For the NWS, this would be a form of deep dealerting, approaching the status of Japan today. The purpose of such a base is to deter others from breaking out of the agreement, and to confront violators if deterrence breaks down.

Such an NFWW could be the end result of a prevailing logic in US disarmament affairs: the stronger the nuclear infrastructure, i.e. the more advanced the capacity for reconstitution, the more the nuclear arsenal can be cut. The NWS would be left with advanced capabilities for reconstitution, while under the NPT, the NNWS are not allowed to engage in activities that are specifically weapons-related. As the last nuclear weapons go away, some states would be virtual nuclear weapon states while the great majority of others would be without similar capabilities. In one particular respect, the NWS lead is unavoidable: they are the ones to have design and testing experience, and that knowledge cannot be erased.

Different ground rules for different categories of states are hard to imagine, however. Forty years of discontent with the NPT's division of the world into nuclear and non-nuclear weapon states, and persistent complaints over the slow implementation of Article VI, which was supposed to end it, have led many NNWS to insist on equal rules for all. In general terms, Obama's Prague and Cairo speeches alluded to the same. The principle of equity will, therefore, be important all throughout the disarmament process. The majority of NNWS will protest any attempt to maintain the current imbalance in the implementation of the NPT; they will demand that single arms control and disarmament measures be equitable; and they will do their utmost to ensure that capability differences are reduced as the process unfolds. If the principle is compromised by moves for unilateral advantage on the part of the most advanced NWS, the emerging powers of Asia, in particular, are unlikely to be cooperative.

If the NWS disarm on the formula “the stronger the reconstitution capabilities, the deeper the cuts”, and the world of zero is based on equitable rules, the NNWS would be free to emulate the same logic. Equity on the basis of ground rules that allow virtual arsenals may tempt many more states to exercise this option. Then, nuclear deterrence – latent or virtual rather than manifest – would be an option free for all, quite possibly leading to a multiplication of deterrence relationships. Especially if nuclear power stations and national fuel cycle facilities proliferate, there may be many more threshold states. Reservations made for the path dependence of nuclear disarmament – always a big caveat – it could, at worst, lead to life in a virtual deterrence crowd.<sup>27</sup> A world without nuclear weapons would not be a world without conflict and if nothing is done to prevent it, tense relations would encourage hedging.

**A world without nuclear weapons would not be a world without conflict and if nothing is done to prevent it, tense relations would encourage hedging.**

As a fixed end state, this is, therefore, a bad idea.<sup>28</sup> First, because it sustains the mentality that nuclear war is possible at any time. Many states may come to think that hedging is prudent, suspecting that others may be cheating, with the result of a hedging race: vertically toward capabilities that can be turned faster and faster from virtual to real; horizontally to involve more states. The trust on which abolition was achieved would then evaporate. Second, virtual arsenals need arsenal keepers, and they are never disinterested experts, but socio-political actors legitimising their activities in terms of threats to be met and demanding more resources to counter them. In effect, the arsenal keepers are likely to push for a hedging race, and would quite possibly prefer a return from virtual arsenals to real ones. Such an end state would contain the seeds of its own destruction. Third, it is a particularly

---

27. Paraphrasing Henry Rowen in Albert Wohlstetter, Thomas Brown, Gregory Jones, David McGarvey, Henry Rowen, Vincent Taylor and Roberta Wohlstetter, *Moving Toward Life in a Nuclear Armed Crowd?*, final report prepared for the US Arms Control and Disarmament Agency in fulfillment of ACDA/PAB-263, PH76-04-389-14 (Los Angeles, CA: PAN Heuristics, December 4, 1975 [Revised April 22, 1976]).

28. Harald Muller, “The Importance of Framework Conditions” in G. Perkovich and J. Acton, eds. *Abolishing Nuclear Weapons: A Debate* (Carnegie Endowment for Peace, 2009).

bad idea because in the breakout scenarios, first strike capabilities are more likely to emerge than in current nuclear constellations.

It would, therefore, be better to go “below zero” to eliminate the fissile materials that have been dedicated to nuclear explosive uses; to institute strict international control of all remaining materials; to dismantle the nuclear weapons infrastructure; and to redirect the workforce to other sector. Even more, nuclear materials that can be used to build weapons should be banned from civilian use as well. Highly Enriched Uranium (HEU) is not the big issue here – there is little HEU left in the civilian sector and what remains is being phased out – but plutonium continues to pose a problem. Technical fixes may or may not solve it: if not, a compromise would have to be struck to accommodate the civilian industry. Dual-capable production facilities for civilian use would remain, possibly based on proliferation-resistant technologies and certainly subject to international control. This would be a more stable NFWF, building trust in a non-nuclear future. It would be a world where nuclear deterrence no longer applies.

However, the worlds sketched above are not dichotomous. They should rather be seen as end points on one and the same scale. Going below zero is a matter of more or less, so this image of an NFWF comes in several variations. Sidney Drell and James Goodby, who argue that a reconstitution capability would be needed to deter breakout, are attentive to the concerns that such capabilities may invite a reconstitution race and, therefore, produce its own instabilities: “A careful judgement will have to be made among nations of comparable technical capabilities regarding nuclear activities that would be reasonable to retain in a state of latency, as opposed to those that are impermissible because they would push the world dangerously close to a reconstitution race”.<sup>29</sup> Activities, facilities, or weapons-related items that should be prohibited would have to be “tested during the run-up to the end state, when responsive nuclear infrastructures would be maintained on relatively small scales and under conditions of agreed transparency”. At that stage, it would be necessary to make a pause to determine what kind of an NFWF to

---

29. Sidney Drell and James Goodby, *A World Without Nuclear Weapons: End-State Issues*, (Hoover Institution, 2009).

go for. Drell and Goodby suggest that it might be appropriate to stop at the level of 50-100 weapons to consider whether the conditions for a final leap onto nuclear weapon freedom are reassuring enough, and to establish what rules and regulations should apply at the destination. Another view, coming close, notes that the powers that subscribe to minimum deterrence keep close to 200 nuclear weapons; that India and Pakistan may be going for forces in about the same range; and that Israel may already be there.

This level may have been chosen for good reason, out of regard for strategic stability, and may, therefore, be an appropriate interim halting point.

At that point, the continuation is hard to foresee, for the world will look much different from today's world. Indeed, it would be presumptuous to claim to know much about it. However, political order issues aside, some force constellations are known to be more unstable and dangerous than others. A few parameters may, therefore, be laid down to steer the process away from the greatest risks in the final approach to an NFWF.

This pertains, in particular, to the worlds immediately above and immediately below zero. The dangers of a world immediately below – of virtual arsenals – have been spelt out above. Similar dangers would exist in a world immediately above. At the level of, say, 30 nuclear weapons, the retaliatory capabilities may be in doubt. Some weapons may be destroyed by an attacker, others may be intercepted, and yet others may not function as planned. As a result, first-strike propensities may be too great for comfort. It may lead to surprise attack, hitting the enemy when his guard is down, or to inadvertent escalation when decision-makers begin to think that war can no longer be avoided. However flexible the notion of minimum deterrence is, force levels in the low hundreds may have been chosen for good reason.

It may, therefore, be wise to skip those transitional phases immediately above and immediately below zero and go from the low hundreds directly to an NFWF significantly below zero. That can be done by eliminating weapon-grade materials, dismantling dedicated nuclear infrastructure

**The dangers of a world immediately below – of virtual arsenals – have been spelt out above. Similar dangers would exist in a world immediately above.**

and redirecting nuclear weapon expertise *before* eliminating the remaining weapons. In other words, the stability of minimum deterrence postures would be maintained till the stability of an NFWW has been ensured. Then, and only then, would it be time to move from one state to the other.<sup>30</sup>

### FRAMING THE APPROACH TO ZERO

In response to the question of how the proliferation impact of nuclear deterrence can be minimised, this paper has homed in on an interim milestone – NFW – which would decouple NWS’ policies from those of NNWS, and an end state – an NFWW significantly below zero – which would do away with any and all notions of deterrence. Four paths downgrading the role of nuclear weapons have been indicated. How should these objectives and paths be framed? In particular, how can disarmament in its two main dimensions – software and hardware – become a dependable prospect?

Similar to the integration theory, which distinguishes between integration as a process and integration as a state of affairs, disarmament may be viewed as a process where one move leads to the next, or it may be seen in a static perspective where measures are introduced without any particular promise or expectation of further steps.

The static perspective carries an immanent risk of reversal. When the continuation is uncertain, the action space for rearmament – for qualitative improvements in particular – remains significant, thriving on the hedging argument. Single steps toward nuclear disarmament may have little or no impact on governments contemplating to go nuclear. For instance, if the US and Russia were to reduce the number of deployed strategic nuclear weapons to 1,000 each with no commitments to further reductions, while all the NWS modernise their weapon systems, the non-proliferation impact would at best be uncertain. As long as the continuation is open to doubt, states of proliferation concern would hardly be impressed.

This would be different if expectations were created that more would follow. Then, proliferators would be singled out as exceptions to a *trend*

---

30. Sverre Lodgaard, *Nuclear Disarmament and Non-Proliferation. Towards a Nuclear Weapon Free World?* (UK: Routledge, 2011).

of improved compliance with treaty obligations, and it is always more difficult to act against an existing trend, especially if it enjoys broad support from both nuclear and non-nuclear weapon states. If the trend takes hold, the non-proliferation norm would be enhanced; the states that have rolled back would find it harder to roll forward again; and the international environment for management of critical contemporary cases of proliferation concern would be more benign. In the UN Security Council, decision-making in support of the trend would be easier.

The opposite of single steps in a static perspective is a convention with a timeline for nuclear disarmament to zero. The NPT is a roadmap to zero, but it is a rudimentary map and it says nothing about what kind of NFWF to go for. At some stage in the disarmament process, a more detailed, comprehensive agreement is needed to guide the final approach to abolition.

The Final Declaration of the 2010 NPT Review Conference noted “the five-point proposal for nuclear disarmament of the Secretary-General of the United Nations, which proposes, *inter alia*, consideration of negotiations on a nuclear weapons convention or agreement on a framework of separate mutually reinforcing instruments, backed by a strong system of verification”.<sup>31</sup> The upside of this text is that the idea is mentioned; the downside, the convoluted and non-committal way in which it is composed. More than anything else, the NWS are stiffly opposed to any specific timeline for disarmament. A crucial question is, therefore, how to make the disarmament process dynamic without resorting to the calendar.

For reasons indicated above, timelines are objectionable to the big powers. Precisely because they have so much power, they treasure the freedom to exercise it. There is, furthermore, something simplistic about reducing the complexities of nuclear disarmament to a timeline.

**More than anything else, the NWS are stiffly opposed to any specific timeline for disarmament. A crucial question is, therefore, how to make the disarmament process dynamic without resorting to the calendar.**

---

31. <http://www.un.org/en/conf/npt/2010>

In the absence of a timeline, it is hard to make disarmament a dependable prospect. Still, in the spirit of SC Resolution 1887, where the P-5 declared themselves in favour of a world without nuclear weapons, it may be possible to generate explicit commitments from one step to the next: a from New Strategic Arms Reduction Treaty (START) to a follow-on agreement on deep cuts to further steps setting the stage for multilateral negotiations; from a Fissile Material Cut-off Treaty (FMCT) to further cuts in fissile material stocks; from the steps taken by the US NPR to limit the role of nuclear weapons to a new SC Resolution, to an international convention on unqualified non-use assurances, to no-first-use doctrines; from procedural to material steps toward an NWFZ in the Middle East, etc. – all the time invoking the advantages of an NFWZ in support of the process. By dropping the timeline in favour of less ambitious provisions for progress, more states may be willing to entertain the convention idea.

Pinning down essential rules of the road toward nuclear weapon freedom can also reduce the action space for spoilers and for unforeseen developments, taking the process off track. The lessons from the Oslo process on the Middle East and from negotiations with North Korea point in the same direction. If at all possible, a compressed, comprehensive approach to the final objective has distinct advantages. A convention with no timeline may be preferable to no convention at all.

For the time being, the challenge is to pursue disarmament without a convention and without a timeline i.e. by forging commitments from one step to the next. However, a convention or framework of mutually reinforcing instruments is desirable, the sooner the better. NWS participation should be sought from the beginning not to replicate the NPT distinction between nuclear and non-nuclear weapon states. Should this depend on the timeline issue, a timeline had better wait. Beyond the deep cuts and NFU milestones, the path dependence of nuclear disarmament makes it hard to envisage how these and other issues should be phrased and resolved.

For all its weaknesses, the NPT and the regime that it harbours are a major achievement. The treaty is resilient at that: in the beginning of this century the grand bargain from the second half of the 1960s on which it is based

came apart, yet it survived. Therefore, a nuclear weapon convention should not be pursued in order to replace it, but to supplement and supersede it.

All the time, two arguments carry particular weight. First, sixty years of no use do not guarantee another sixty years without the use of nuclear arms. On the contrary: there is much to suggest that the risk of nuclear weapon use is greater than before. The premium on abolition has, therefore, grown. For the proponents of an NFWW, this is hard-nosed realism. The four US horsemen were always known to be realists, and so are many other statesmen who have joined them in the call for an NFWW. Second, the threat of mass destruction is morally unacceptable and should be made unambiguously illegal. Chemical weapons are already outlawed on such grounds. Since the effects of nuclear weapons are stronger, more indiscriminate and long-lasting than those of any other weapon, there is all the more reason to ban them. From both angles, MAD is an appropriate acronym for continued reliance on nuclear deterrence.



# PATTERNS OF INSURGENCY: STRATEGIES AND DOCTRINES

A. V. CHANDRASEKARAN

*A revolution is not a dinner party, or writing an essay, or painting a picture, or doing embroidery; it cannot be so refined, so leisurely, so gentle, so temperate, kind, courteous, restrained and magnanimous. A revolution is an insurrection, an act of violence by which one class overthrows another....*

— Mao Tse-tung

National liberation movements do not emerge one fine day out of the mind of some superman or at the instigation of some foreign power. They are born out of popular discontent. They emerge over long periods to combat oppressive conditions and express aspirations for a different kind of society. They are, in short, the agents of class and national struggles.

Beginning in a modest way in the 19<sup>th</sup> century, and achieving great force in the 20<sup>th</sup>, the contradictions of the capitalist world economy have led to the rise of a network of anti-systemic movements. These movements have taken different forms, sometimes emphasising their class character, sometimes emphasising their national character, usually doing a bit of both. They basically seek to counter the oppression of the world system and, in their more radicalised version, to destroy it.<sup>1</sup>

---

\* Group Captain **A.V. Chandrasekaran** is a Senior Research Fellow at the Centre for Air Power Studies, New Delhi.

1. Aquino de Braganca, ed., *The African Liberation Reader: Documents of National Liberation Movements* (London: Zed Press, 1982), pp. 1-2.

Even to speak of a “pattern of an insurgency” is something of a misnomer, as there are probably a number of patterns in insurgencies, split between the orthodox pattern, to the bourgeois-nationalist pattern, and the *jihadist* pattern. One expert compares them to flocks of birds or schools of fish that suddenly group, travel in formation, and then disperse—all without any central command. Two general patterns for insurgencies emerge from the history of past revolutionary wars. One is based essentially on the theory and experience of the Chinese Communists and was offered by Liu Shao-ch’i as a blueprint for revolution in colonial and semi-colonial countries. The second pattern is the bourgeois or the nationalist pattern which limits itself to seizure of power and the post-insurgency operations as secondary preoccupations.

During the Cold War, an insurgency’s ‘home’ was usually a country, but an insurgency could also arise within a subdivision of a country. By contrast, an insurgency today is more likely to cross borders, particularly those drawn without respect for ethnic, cultural, or religious realities. In past anti-colonial, nationalist and Marxist “wars of liberation,” the ruling government and its insurgent adversaries fought over the crucial, complex issue of legitimacy; that is, which government was thought to be the rightful authority. Governments claim legitimacy based on history, ideology, culture, economics, force—and, at times, political representation. Before the decline of the Soviet Union, Marxist, nationalist, or in the case of Afghanistan, religious ideology buttressed the insurgency’s claims to legitimacy, but specific grievances against the ruling regime usually supplied the most compelling arguments for the claim to legitimacy. In any struggle for allegiances, the ruling regime might not be able to coopt the insurgency’s ideology, but it might be able to challenge its claims to legitimacy by addressing and resolving grievances. Mao Tse-tung spoke of guerrillas as fish in the sea, a metaphor that suggests that a great sea of support exists and that fish cannot survive outside it.

Violence is central to war. Insurgents attack government institutions and personnel, counter-insurgent troops, and the pro-government population. Government institutions under attack include administrative

offices and agents as well as economic and political infrastructure. Counter-insurgents respond by attacking insurgent leaders (perhaps already formed into a shadow government), insurgent forces, and their committed supporters. But while violence is central, it is important to draw a distinction between the kinds of violence involved.

**Counter-insurgency works best when it identifies an enemy and concentrates only on him.**

In his classic work on insurgency, *War in the Shadows*, Robert Asprey differentiates between what he calls quantitative violence and qualitative violence. Quantitative violence is essentially indiscriminate. We can measure it in quantitative terms, for example, by the number of rounds fired, tons of bombs dropped, or bodies counted. In conventional war, troops being fired upon from a village would likely call in an air strike, but insurgents faced with the same situation would be more apt to target village leaders and kill them, but in such a way as to leave a lasting impression of terror. To put it bluntly, in quantitative violence, how many you kill matters; but in qualitative violence, who you kill matters.<sup>2</sup>

Quantitative violence is appropriate against insurgents organised and equipped for conventional war as witnessed in the decimation of the Liberation Tigers of Tamil Eelam (LTTE) in Sri Lanka. But, more often, counter-insurgency works best when it identifies an enemy and concentrates only on him. The use of violence leaves a deadly residue. Those who are harmed or whose family and friends have been victimised, do not embrace the perpetrators of violence but harbour hatred and seek retribution against them. Killing large numbers of insurgents might not weaken the enemy but simply gain him new adherents. The Shining Path, which had lost scores of cadres to Peruvian counter-insurgent forces, is yet to die down. During the Cold War, outside powers complicated the dynamics of insurgency because outside supporters viewed such conflicts as limited war in Clausewitzian terms and it suited their political and strategic purposes. The United States and the erstwhile USSR were the biggest perpetrators of such phenomena.

---

2. Robert P. Asprey, *War in the Shadows* (London: Macdonald and Jane Publishers, 1975), Ch 27, pp. 387-399.

## PATTERNS OF INSURGENCY

### *The Orthodox Pattern (Communist)*

The orthodox pattern, which existed primarily in colonial and semi-colonial territories sought a *social revolution* on the lines of Marx and Lenin to alter the existing order. In the 20<sup>th</sup> century, Mao's *On Guerrilla Warfare* became the bible of global insurgencies. Mao was considered to be a practical and theoretical authority in people's wars of liberation – movements to overthrow traditional or colonial-imperialist masters. He converted Karl Marx's theory of the inevitable revolt of the proletariat (industrial working class) into a strategy for the mobilisation of the largely agrarian society of China. Revolutionary warfare continues to influence current insurgencies. Today, nine of ten insurgencies in the world are Maoist in scope. Mao, under the tutelage of hardline Marxists such as Li Ta-Chao and Chen Tu-Hsiu, became convinced that a new China can only be created on the basis of the doctrines of Marx and Lenin. In order to achieve his objective, he started the mission by following five steps.

### *The First Step: Creation of a Party*

In 1921, in keeping with the fundamental principles of Marxism and Leninism, Mao Tse-tung formed the Communist Party of China in Shanghai. The new party concentrated on organising the Chinese proletariat into trade unions which was a resounding success. The labour population, close to two million, was ill-paid, ill-treated and, ill-fed and, hence, extremely receptive to the Communist propaganda. Mao did not hesitate to use all the resources at his disposal, including party newspapers, youth movements, schools, clandestine movements and was also instrumental in organising close to one hundred strikes, both big and small, which were all hugely successful. Simultaneously, the peasants were also included; as David Gaulula, noted counter insurgency expert, has brought out, the inclusion of peasants was a *sine qua non*, as the coming armed struggle would have to be fought in the rural areas and the chance of success largely depended on the support of the peasantry residing in the rural areas.<sup>3</sup>

---

3. David Galula, *Counter-Insurgency Warfare: Theory and Practice* (New Delhi: Pentagon Press, 2008), Ch-3, pp. 30-31.

The intensity and the vicissitudes of the long struggles ahead make it imperative that the party be strong, disciplined, and tested. The party should not end up being a loose organisation likely to break apart, countering any turns in the party policy nor succumbing to the reactions of the counter-insurgents. It is of the utmost importance that the party should not disintegrate, basking in victory, when the Communist reforms are to be implemented and when allies turn enemies. Mao also harped upon democratic centralism, criticism and self-criticism as well. The volunteers to the party would be effectively screened using the easy criterion of class origin, and also making the applicants' sponsors responsible for both present and future behaviour. It is essential that the purity of the party be maintained through regular weeding out, and deviators from orthodoxy either won back by conciliatory methods or expelled if not confessing their errors.

*The Second Step: United Front*

An individual party, without the support of allies or likeminded parties, is more likely to fail in the face of an onslaught by the counter-insurgent forces. So to achieve success, a large united front is required even if it has to have some dubious allies whose use should be curbed short of the point where they can endanger the basic tenets of the organisation. The solution to this problem would be the "salami tactic" whereby the allies would be weeded out once the party is firmly in power. The party, in order to maintain its identity, can enter into alliances with other parties, neither merging with them nor absorbing them. The party's platform at any given time during the conflict must contain something that appeals to each ally, and nothing that may be too objectionable to them. The actual post-war intentions need to be kept secret, known only to the top leadership.

The party further would work even if required clandestinely to channel its actions in the direction so chosen by the party and to prevent any split in the united front. The party would require an excellent intelligence apparatus to achieve this aim.

*The Third Step: Protracted War Through Guerrilla Warfare*

The Communists recognise that initially the balance of forces is likely to be in favour of the government they intend to overthrow. The process of changing this balance may be long and difficult and one cannot expect early success. They stress this by preparing their cadres for a protracted war using guerrilla methods, thus, forestalling any disillusionment that may occur should there be no early victory.

There is no secret about the ingredients of guerrilla warfare—at the purely tactical level it so closely resembles its parent, irregular or partisan warfare, that to the uninstructed there seems to be no distinction between them. It is the injection of ideology into guerrilla operations that transforms partisan warfare into revolutionary war.

Mao Tse-tung wrote many years ago, “A trained and disciplined guerrilla is much more than a patriotic peasant, workman, or student armed with an antiquated homemade bomb. His indoctrination begins even before he is taught to shoot accurately, and it is unceasing. The end product is an intensely loyal and politically alert fighting man.”

The insurgent may seize power merely by political play and subversion. Failing to do so, an armed struggle would be the logical continuation. Mao argues that guerrilla warfare is not an end in itself but should be promoted as a strategic auxiliary to orthodox operations without assigning it the primary position in the war strategy or substituting it for the mobile and positional warfare conducted by orthodox forces. The Chinese Communists assert that armed struggle is both necessary and inescapable, and are of the firm conviction that a victory needs to be won by force, and that ‘liberation’ must neither be granted nor gained by compromise. They have their following reasons to substantiate their claim;

- A local revolutionary war is a part of the global war against capitalism and imperialism and a military victory against the local enemy is indeed a victory against the global enemy and ultimately contributes to his defeat.
- On seizing power after an armed struggle, the insurgent is sure that his victory is complete, and his authority absolute. The polarised population

on account of the war reveals enemies and friends, and further facilitates implementing the Communist programmes.

- By winning through his own effort, the party consolidates itself, acquires experience, analyses shortcomings, cures its teething problems, eliminates the weak links and chooses the right leader.

The ultimate goal is the creation of the insurgent's military power which needs to be achieved progressively and guerrilla warfare is the only possible course of action to begin with.

Mao emphasises a three-pronged strategy on the conduct of guerrilla operations.

**Phase one** emphasises devotion to the organisation, and preservation of bases in isolated and difficult terrains. The volunteers are indoctrinated, trained and the propagandists set course in small groups, not numbering more than three, to persuade and convince the inhabitants of the neighbouring countryside to enlist their support. This is primarily carried out to ensure building an effective belt to ensure uninterrupted supply of food, recruits and information.

**Phase two** advocates increasing the tempo of the operation by multiplying acts of sabotage and liquidation of collaborationists and reactionary elements. The vulnerable military and police outposts are identified and attacked to step up psychological operations to demoralise the enemy. The attacks achieve yet another aim of seizing arms, ammunition, medical supplies and radios desperately required to enhance strength. The guerrilla force, becoming better equipped with increased capabilities, immediately dispatches political agents to indoctrinate the inhabitants of peripheral districts to be absorbed into the expanding "liberated areas".

**Phase three** is the decisive and final stroke wherein the enemy's destruction is ensured by orthodox military operations, placing the guerrilla operations in a subsidiary role. The hallmark of this phase is flexibility of operations. Mao echoes Clausewitz and insists on subordinating combat to an overall political strategy.

Further, Mao, while advocating guerrilla warfare, insists that the basis of guerrilla discipline must be the individual conscience, and only pure and clean volunteers willing to fight would be able achieve the desired success. Mao was strongly against guerrillas being subjected to revolutionary discipline such as physical beatings or tongue lashings. He was strong in his convictions that the self-imposed discipline by the guerrilla is able to understand the reason for fighting and the reason for obeying, which by itself transforms into a tower of strength and also harmonises the relationships between the officers and the soldiers. Mao was also emphatic on the emancipation of his men which should not only be tolerated but discussed as well. He insisted that the officers live under the same conditions as their men to ensure the officers gain admiration and confidence from the men which is so vital in war.

*The Fourth Step: Strategic Equilibrium Phase / Movement Warfare*

Guerrilla warfare alone cannot win a war against a resolute enemy. A prolonged guerrilla activity, despite its cost-effectiveness and ability to survive constant counter-insurgency efforts, also has the potential to alienate the local population. It calls for the enemy being confronted on his own ground for which an insurgent army has to be created. If this regular army is created prematurely without proper training, it may lead to disaster. So it is essential that a guerrilla army be created first and the best guerrilla units may be transformed into regular troops, gaining from a company level to even a division level.

Mao also lists six ways in which guerrilla units are originally formed which are:

- Fundamental type: Formed from people automatically springing and taking up arms to oppose the invader. In this case, background and experience are not considered important and only courage is seen as essential.
- By peasant guerrillas.
- By units of local militia.
- By enemy deserters.

- By former bandits.
- By bandit groups.

Each category poses a special set of problems in recruiting and organising but it is a worthwhile effort – as the ancient Chinese saying goes on to explain, the seas and rivers are deep because they absorb the waters of the small streams.

To offset the shortages of arms and ammunition, capturing from the enemy is the tactic best adopted by the insurgents. Mao terms this as ‘commercial operations’ as they are conceived and executed to bring more gains than losses. The territorial pattern of the insurgent’s strategy is brought out by his aim of changing the occupied areas into guerrilla areas, guerrilla areas into guerrilla bases, and these into regular bases. In order to achieve this, Mao assigned a number of responsibilities to his commanders and cadres of the Red Army on the conduct of guerrilla warfare such as;

- To exterminate small forces of the enemy.
- To harass and weaken large forces.
- To attack enemy lines of communication.
- To establish bases capable of supporting independent operations in the enemy’s rear.
- To force the enemy to disperse his strength.
- To coordinate all these activities with those of regular armies on distant battle fronts.
- Select the tactic of seeming to come from the east and attacking from the west.
- Avoid the solid, attack the hollow.
- Deliver a lightning blow and seek a lightning decision.
- While engaging a stronger army, the guerrillas are to withdraw when the army advances, harass it when he stops, strike it when it is weary, and pursue it when it withdraws.
- In guerrilla strategy, the enemy’s rear, flanks, and other vulnerable spots are his vital points, and there he must be harassed, attacked, dispersed, exhausted and annihilated.

*The Fifth Step: The Strategic Offensive Phase / Annihilation Campaign*

Mao Tse-tung grasped all the Clausewitzian themes, including the annihilation of the enemy as the goal of defence: a logical interpretation of the prolonged conflict. He adds "...campaigns of annihilation are the means of attaining the objective of strategic attrition." The series of victories ensures the growth of insurgent strength and decrease in the opposition strength when the fatal blow is expected to be struck at the enemy. The annihilation campaign will have to consider the following factors:

- Strength of the enemy's military assets.
- Solidity of his political structure.
- Subversive activity of the enemy's underground agents.
- The insurgent's own psychological superiority.

Once these factors are ensured, the insurgent operations would accelerate, beginning with a series of offensives aimed at the complete destruction of the enemy.

Mao's long fight for, and eventual conquest of, China was a model copied by various insurgent groups the world over and included the Algerian rebels, the Viet Minh, Cuban insurgents, Shining Path of Peru, Malayan Communists, and to a large extent the Mujahideen of both the Soviet era and today.

#### **MAO'S INFLUENCE IN VIETNAM**

Ho Cho Minh and Gen Giap, the architects of the Viet Minh victory over both the French and the Americans had wholeheartedly accepted that Mao Tse-tung led the Chinese Revolution to its absolute victory, using a combination of his ingenuity and famed guerrilla tactics. Owing to the geographical, historical, economic, and cultural conditions, the Chinese Revolution exerted a great influence on the Vietnamese Revolution, which learnt from its experiences. Ho Cho Minh and Giap, though familiar with Mao's theory of protracted warfare, had wanted to avoid the guerrilla phase of fighting called for by Mao. But they were not able to sustain a regular army and quietly reverted to guerrilla style operations. Both accepted their

errors and Giap introduced the three phases of Mao's style of war which went on to become the Vietnamese doctrine and is explained below

- Strategic defence: A passive resistance to wear the enemy down while both regular and irregular Viet Minh units reorganised and built up strength.
- Extensive guerrilla attacks as well as a continued propaganda—subversion effort.
- General counter-offensive to defeat the enemy.

### **MAO'S INFLUENCE ON SENDERO LUMINOSO (SHINING PATH)**

Abimael Guzman founded the Communist Party of Peru in 1970 and continued in it for a decade, but dissatisfied with the leadership of the Communist Party of Peru, the Red Flag, he took up arms against the Peruvian government and broke away with his own group to form the "Shining Path" in 1980. He was an ardent follower of the orthodox pattern of insurgency and was greatly influenced by Mao. He proudly proclaimed himself as the "Fourth Sword of Marxism" after Marx, Lenin and Mao. The Peruvian case amply demonstrates how a small number of well trained, highly motivated, and organised militants can work together, organise internal support, and take a nation of over 20 million to the brink of near collapse within 10 years. There can be little doubt of Guzman's debt to Chinese Maoism. His doctrines were all prominent themes of Maoist thought. More specifically, the style of the Shining Path mimicked the Cultural Revolution, in both personal behaviour and public life. Guzman visited China thrice and was captivated by the success of Maoism.<sup>4</sup>

#### *The Shining Path Doctrine*

- Blending of mass mobilisation techniques of both rural and urban insurgencies.
- Blending of both military and political-psychological elements to conduct a true 'people's war.'

---

4. Orin Starn, *Maoism in the Andes: The Communist Party of Peru-Shining Path and the Refusal of History* in [www.latinamericanstudies/peru/shining\\_path](http://www.latinamericanstudies/peru/shining_path), accessed on June, 2011.

- Primacy of ‘class struggle.’
- Need to combat imperialism.
- Importance of the vanguard party.
- Revolutionary violence essential to overthrow the old order.

In high risk social movements, membership becomes fully socialised into an insular and ideologically based network where the demands associated with participation are unbending. The member’s place in the organisation and the activities he is expected to engage in become the centre of his existence. The internal strength of such a movement is the result of intense organisational work through which a mass base of support is created. The base is created by the indoctrination efforts directed by the leadership that considers translating the ideology into action as its primary task. Once institutionalised, high-risk social movements (to include revolutionary insurgencies) become professionalised. The organisation is able to outlive its charismatic founder(s) and become routinised. The Shining Path is a perfect example of this kind of movement and is very much alive despite the incarceration of its main leaders for close to two decades.<sup>5</sup>

### **THE BOURGEOIS-NATIONALIST PATTERN**

The bourgeois-nationalist pattern occurs in established and independent states that focus on the act of power changing hands rather than installing a new order. The bourgeois struggle involves deep-rooted issues that are accepted or ignored by the ruling class. It is basically a short-cut, bypassing the long and demanding work of building a solid platform in the form of a party, an armed wing and with solid support from the population. Through violence, the bourgeois-nationalist insurgent establishes his movement quickly though he does not necessarily feel obligated to initiate a Maoist type political arm or offer other alternatives to the government. In this, pattern, a small group, or cadre of insurgents engages in blind and random terrorism soon after establishing the group. The idea being that random

---

5. Shultz H. Richard, “Global Insurgency Strategy and the Salafi Jihad Movement” *INSS Occasional Paper* 66, April 2008.

bombings, arson and assassinations, conducted in a spectacular fashion by concentrated, coordinated and synchronised waves, will attract publicity for the cause and recruit new members.

The phase of blind terrorism is followed by one of more selected terrorism. Once successful, this pattern will then rejoin the orthodox pattern. The revolutionary struggle of the second model involves deep-rooted issues that are accepted, or ignored by the ruling class. "The goal of the insurgent is limited to the seizure of power; post insurgency problems, as secondary preoccupations, are shelved..." Through violence, the bourgeois-nationalist insurgent establishes his movement quickly though he does not necessarily feel obligated to initiate a Maoist-type political arm or offer other alternatives to the government. Here the insurgent seeks publicity through random terrorism and then isolates the population from the government through terrorist acts aimed specifically at the government and its symbols of power. In some respects, the bourgeois-nationalist pattern expedites Mao's orthodox pattern by using spectacular attacks more than propaganda and other activities to accelerate eroding civilian confidence in the government. The random violence patterns of Iraq's Sunni rejectionists follow the bourgeois-nationalist pattern though they differ from their Al Qaeda partners who desire to establish a Pan-Islamic Caliphate. Overall, Iraq's insurgency was more akin to bourgeois-nationalist insurgency. The insurgency carried out by the JVP (Janatha Vimukthi Peramuna) in Sri Lanka was also an example of the bourgeois pattern.

There are two steps which explain the bourgeois pattern of insurgency, as given below.

#### *First Step—Blind Terrorism*

The aim of this method is to garner publicity for the movement and its cause so as to attract attention and lateral supporters. In order to achieve this, the insurgents often resort to random terrorism, bombings, arson and assassinations. These acts are conducted in as spectacular a fashion as possible through concentrated, coordinated, and synchronised waves. The advantage this kind of operation offers is the requirement of a limited number of men to carry out.

*The Second Step—Selective Terrorism*

This phase quickly follows the first and the aims are to isolate the counter-insurgent from the masses, to involve the population in the struggle, and to obtain the complicity of the masses. Insurgents only have to demonstrate that they can best protect a population or, far easier, inflict enough mayhem and destruction to demonstrate that the existing authorities cannot. Insurgents can exert leverage by convincing a population that peace will return only if the insurgents gain what they demand. Insurgents can be effective by destruction, and it is always easier to destroy than to create. It requires the genius of a Leonardo Da Vinci to paint a portrait of Mona Lisa, but it only takes the malevolence of a maniac with a box cutter to rip it to shreds. The fear is spread in various parts of the country by targeting low ranking government officials who work more closely with the populace, mainly policemen, mailmen, mayors, councillors and teachers. Killing high ranking counter-insurgent politicians serves very little purpose for they are too far removed from the population for their deaths to serve as examples.

The insurgents also set about collecting money from the populace with a single motto that those paying money are considered part of the support, and those refusing to pay are considered traitors and are simply executed. In order to involve the population further, a simple *mots d'ordres* is circulated, including boycotting of tobacco. After that, anyone found smoking is simply executed. Those executed normally are found with a tag explaining the reason for the execution and that they were condemned by a revolutionary tribunal.

Bridges are simply blown away, severing the links the people can have with counter-insurgent forces, ensure that the populace is left with no alternative. The killing in Afghanistan of people found guilty of watching television, girls in both Afghanistan and Waziristan areas of Pakistan being targeted for going to school, and men found shaving their beards in these areas being targeted, all fall under this category. The number of village elders killed in Pakistan by the Tehreek-e-Taliban is an illustration this kind of violence.

## JIHADIST PATTERN

Conventional national militaries train, think, and fight according to their doctrines. To date, however, America and the West have not sufficiently appreciated that Al Qaeda, too, is fighting the insurgencies in Iraq and Afghanistan according to a doctrine of its own. That doctrine has been developed from the group's experiences during the Afghan War against the Red Army, and has matured through each of the insurgencies in which bin Laden's fighters have

since been involved, from Eritrea to Xinjiang to Mindanao. In presenting their doctrine, Al Qaeda's strategists also have tipped their turbans to the significant lessons they have learned from Sun Tzu, Clausewitz, Mao, General Giap, and even Ahmed Shah Masood, as well from the training manuals of the US and UK Marines and Special Forces. Ironically, Al Qaeda strategists have discussed all of these matters for years in their Internet journals, the insurgency-related work of five of the group's strategists: the late Abu-Hajer Abd-al-Aziz al-Muqrin, Abu Ubyad al-Qureshi, Abu-Ayman al-Hilali, Abd-al-Hadi, and Sayf-al-Din al-Ansari. These writings discuss the need to conduct the political and military facets of an insurgency in tandem. They are especially worth reviewing now because of the success Al Qaeda is having in using its doctrine against US-led forces in Iraq and Afghanistan.

**Al Qaeda Doctrine in Iraq and Afghanistan: The Military:** The prominent features of the Al Qaeda military doctrine are explained below:

- 'Religious obligation' is the central point on which Al Qaeda's insurgency doctrine was and is grounded. Osama bin Laden and—since the US-led invasion of Iraq—hundreds of Islamist leaders and clerics have declared a "defensive *jihad*" against the United States, a form of *jihad* that mandates the participation of every Muslim through taking up arms, financial donations, prayers, providing safe havens, or some

**America and the West have not sufficiently appreciated that Al Qaeda, too, is fighting the insurgencies in Iraq and Afghanistan according to a doctrine of its own.**

other form of support. This is what Abu-HajerAbd-al-Aziz al-Muqrin called the "First Axis of *Jihad*," the axis that requires complete victory over the infidels, a goal that "is not subject to discussion" and which permits "no half-solutions" and "no bargaining." In this form of *jihad*, however, bin Laden and Al Qaeda's strategists have firmly declared that universal participation does not mean that each Muslim acts on his or her own, but rather they act in unity with other Muslims. "A feeling of [individual] responsibility," Sayf-al-Din al-Ansari explained, "does not mean embodying *jihad* in scattered individual actions. The feeling needs to be deepened by striving for well-planned actions emanating from a position of collective activity."

- The 'collective activity' is what Saudi theologian and strategist al-Muqrin termed the "Second Axis of *Jihad*," the one that covers military strategy and operations, and features a doctrine that is 'flexible,' depends on conditions and circumstances, and can easily accept half-solutions. The Mujahideen have achieved this adaptability based on practical experience and field results. This implies that the *jihad* military doctrine is constantly changing, thus, denying America the chance to master it and train its troops on how to confront it decisively. The insurgents' doctrine must address all aspects of the country and society in which the war is being fought. Further, working in an organisation dedicated to *jihad* "requires a fundamental working knowledge of planning, administration, security, psychology, sociology, history, geography, politics, strategy, law, education, preaching, and military science, not to mention religious knowledge."
- In terms of fighting the US-led coalitions in Iraq and Afghanistan, Muqrin spoke for each Al Qaeda strategist when he explained that Islamist forces must be prepared to fight a "**long war of attrition**," a struggle in which "the enemy of God will feel that it is impossible to finish off the Mujahideen's military power." In both the Iraqi and Afghan "arenas of *jihad*," the overriding goal for Mujahideen leaders should be to prepare to fight the mightiest military power on earth; the insurgent leadership, must "know the enemy it is fighting." The Mujahideen chiefs must be

“psychologically prepared for the worst” and, on this basis, they must build an organisation “so if one link falls, whatever its organizational size is, the organization [as a whole] does not suffer lethal blows.” Before the widespread attacks begin, it is essential that leaders conduct extensive “reconnaissance and surveillance operations to find the enemies’ weak points,” and also to “build a vital and dynamic database on each target, as well as every change in enemy movements in all regions [of the country] before taking any action.”

- When military operations based on this data are ready to begin, Muqrin urged the Mujahideen to follow “**the 1,000-wound**” policy of guerrilla war with the goal of prolonging the war to “exhaust” the enemy’s patience and resources, and to avoid set-piece battles and attacks on “hardened targets” that would be too costly in terms of Mujahideen casualties. The enemy can be exhausted without fighting any real battles with him. Al Qaeda’s strategists believe that they could find no better foe than the Americans against whom to implement this doctrine. The Americans love “fixed bases,” and even in the field, their combat forces are awkward, with troops who are “highly paid and overloaded with comfort facilities that often restrict their movements.” The key to victory lies in a simple reality that it is important to understand that the American bases are, “known and immovable,” while those of the Mujahideen are “light and movable.”

#### **AL QAEDA DOCTRINE IN IRAQ AND AFGHANISTAN: THE MEDIA**

Among the strategists referenced in this article, the Saudi theologian and strategist al-Muqrin most thoroughly discussed the essential interconnectedness of the military and media dimensions of insurgency. He argued that the military and media campaigns must be accelerated simultaneously. While Al Qaeda’s military doctrine required that the Mujahideen wage war in all areas of Afghanistan and Iraq, this widespread activity was no less essential from the perspective of influencing the Muslim and Western worlds. Such demonstrations, moreover, will stimulate donors to increase funding for the Mujahideen. This is considered vital, since “*jihad*

eats up enormous funds” and those funds are “the nerves of the *jihād*.” In addition, broad and continuous Mujahideen military activity will send a warning “through the language of blood or fire” to the people of nations allied with America that “their governments are getting them involved in wars and conflicts with which they have nothing to do.”

The insurgency doctrine used by Al Qaeda has been evolving for more than a quarter-century, and is designed to defeat conventional Western military forces. It calls for the group’s fighters to be able to fight in the mountains, in desert regions, in maritime conditions, and to be able to conduct what Muqrin refers to as “covert action” in urban areas. These multifaceted military operations must be matched by the Mujahideen “excelling in their organised media action.”<sup>6</sup>

The *jihād*ist strategists further outlined that for the Islamist *Jihād* movement spearheaded by the Al Qaeda to execute a global version of the national level revolutionary insurgent strategy, it would have to meet five requirements or conditions.

### ***First Requirement***

Conceptualise an ideology that performs the same functions as those adopted by high risk social movements. This entails developing a series of frames to: (1) describe the social and political problems requiring immediate and drastic action; (2) propose a new idealised system to replace the depraved one that resonated with the population; and (3) identify steps to bring this to fruition.

### ***Second Requirement***

An innovative leadership that can conceptualise that ideology and establish an embryonic organisation capable of operationalising it to begin to attract and recruit a critical mass of supporters. In the incipient phase of insurgency, these are first order tasks.

---

6. Maj Jan L Rueschhoff, US Army, *Old Book New Lessons: Mao, Osama, and the Global Qutbist*, Dissertation submitted to the US Marine College in 2007, pp. 9-18.

### *Third Requirement*

Establish an infrastructure capable of fighting a protracted global insurgency. To do so, a process is needed to draw and bind individuals to the movement. That process inculcates the movement's ideology and narrative into those attracted to it. To do so, new facilitators, information systems and networked organisations are required to be substituted for this normally localised face to face approach.

### *Fourth Requirement*

As the incipient stage proceeds, a global insurgency (as with its national level revolutionary insurgency counterparts) enters a period of protracted or "long war." In doing so, it has to set out for itself (1) where it intends to fight (the area of operations); and (2) how it intends to do so (the organisational infrastructure and war-fighting tactics they intend to use).

### *Fifth Requirement*

To execute a global insurgency, the *jihadists* would have to employ an array of political, psychological, and paramilitary methods within their areas of operations to target both near and far enemies.

## **COMMON CHARACTERISTICS OF ALL INSURGENT DOCTRINES**

There are certain basic characteristics which would stand firm in all insurgent doctrines evolved over a century'

- **Political Primacy of the Struggle:** In a conventional war, politics will act as an instrument of war. In an insurgency, the converse applies: the violent actions undertaken by the military arm of the insurgency are not the main effort but merely actions to support the propaganda struggle which, in turn, contributes to the overall political struggle. Classical insurgency is first and foremost a political struggle, so all actions must be evaluated against their political effect before being undertaken.
- **The Population is the Objective:** If the insurgents succeed in alienating the population from the government, controlling them physically and winning their support, then the insurgency will eventually succeed. The

fight is primarily '*for the people*' and '*amongst the people*'. The support of the population, thus, becomes the *sine qua non* for the insurgents, as they require the support of the people for food, shelter, information and sometimes weapons. The insurgents make full use of their ability to dissipate into the populace, something Mao described as being able to swim like fish in the water.

- **Role of Propaganda:** The insurgents need their actions to reach far and wide, and propaganda is one of the main characteristics in all insurgent doctrines. To achieve this, insurgents will build their rhetoric on a narrative that explains the origin of the struggle, its objective and purpose. It is essential to gather support from the population and to undermine the government's views.
- **A Protracted Struggle:** An insurgency is a methodical and painstakingly long and often slow process of rallying support and building strength. Mao's fight against the Chinese nationalists and the Japanese occupation took 22 years, Ho Cho Minh's struggle against the French, Americans and South Vietnamese took 30 years, the Malayan insurgency lasted 12 years, the Algerian insurgency 8 years, and the Afghan insurgency has crossed 10 years and no end seems to be in sight. When the political platform and the organisation are being built by the cadres, it is imperative to avoid a confrontation with the government forces as they are bound to be wiped out. In the beginning, the insurgents' operational objective would be to avoid defeat, whereas the counter-insurgents desperately would need an early victory. When no decisive results are forthcoming, the insurgents will continue growing in force and, thus, rendering it much harder for the government to counter them. One of the insurgent's primary assets is patience, while impatience would be the counter-insurgent's liability.
- **Asymmetry in Resources and Motivation:** The relationship between the insurgents and the counter-insurgents is from the outset characterised by an asymmetry that will gradually be reduced as the insurgency gains support and resources. In the initial stages of the struggle, the counter-insurgents will have at their disposal an overwhelming advantage

in tangible resources, formal diplomatic recognition, control of the executive, legislative and judicial branches of national power, a grip on the administration, police, financial, agricultural and industrial resources and control of the transport and communication facilities and, most importantly, command of the armed forces. Against these formidable resources, the insurgents have only the ideological power of their cause which, though formidable, will have to counter the government might. The government has everything but a cause, and the insurgents have nothing but a cause. The insurgents strategy would be to turn their intangible assets into concrete ones.

- **Asymmetry in Organisation:** Any classical insurgency will always be built around a core group or cadre of very dedicated members organised centrally and hierarchically. The actual armed struggle, however, will be conducted by small and independent units operating outside of direct and continuous control from the political leadership. They are guided in their actions by a common idea or a vision. The counter-insurgent, on the contrary, is normally rigid in his approach, not amenable to changes. These rigid forces, often doctrinally based on the conventional military wisdom of mass, will have great problems in defeating the more fluid and networked insurgent organisation that very quickly can disperse into the population or into rough terrain. On the contrary, the large military units of the counter-insurgents present a larger footprint in the engagement phase, and they tend to be slow, noisy and highly visible, making them easy targets.

## CONCLUSION

The citizens' anger at political repression or desperate poverty is not a sufficient condition for an insurgency. Their anger is effectively channeled by the insurgent organisation against the state to garner and win their support. In order to achieve their objectives, the insurgents draw out doctrines based on past experiences of famous guerrilla movements or borrow thoughts from the greatest thinkers like Mao, Giap, Carlos Marighela, and Guzman. The doctrines are primarily to offset the weakness and disadvantages the

insurgents are likely to encounter during various phases of their conflicts with the counter-insurgent troops. The government forces, though numerically weak, are definitely strong on the quality of their troops and equipment, and, on the contrary, the insurgents, by their sheer numbers are strong numerically but weak qualitatively. These issues are all taken into consideration during the development of tactics and doctrines and all the strategies are based on these conceptions.

# EFFECT OF WEATHER AND TERRAIN ON AIRLIFT OPERATIONS

ASHOK K. CHORDIA

## AIRLIFT AND ELEMENTS OF NATURE

Airlift is fundamental to military operations. Among others factors, the basic requirements for a successful airlift are a versatile delivery platform, favourable weather and hospitable terrain. Choice of an air superiority platform is limited by the inventory of an air force. Thus, given a platform, weather and terrain play a purposeful role in precise deliveries. Each of these elements can influence aerial delivery to the extent of absolute success or ultimate disaster. Visibility, cloud cover and precipitation are the main hazards for air transport operations<sup>1</sup>. Winds and illumination are also critical for airlift. The effect of terrain is limited and more predictable. Together, these elements have an even more profound effect. While weather is a dynamic factor, terrain is less so. Most of today's technology aims at diminishing the effects of weather and terrain. Efforts, though clandestine, have also gone into experiments to control weather.

History is replete with examples of the far-reaching effects of these elements on airlift operations. In the past, when flying was dependent on visual clues and accident investigation was less developed, accidents were generally attributed to pilot error. Years of flying experience later, weather still baffles pilots, paratroopers and meteorologists. Weather undergoes

---

\* Group Captain **Ashok K. Chordia** is a Senior Fellow at the Centre for Air Power Studies, New Delhi.

1. Ajey Lele, *Weather and Warfare* (New Delhi: Lancer Publishers & Distributors, 2006), p. 4.

**The basic requirements for a successful airlift are a versatile delivery platform, favourable weather and hospitable terrain.**

continuous change. Weather phenomena have scientific bases and follow the known laws of physics and chemistry. Knowledge about the weather at the mounting base, en route, and at the point of delivery is essential for planning airlift. It is equally important to know the likely changes in weather conditions that may affect the operations. Thus, weather forecasting assumes significance. Weather forecasting includes predictions of changes on the earth's surface caused by atmospheric conditions e.g. snow and ice cover, and tides. Forecasting entails collection and analysis of data through a variety of statistical and empirical techniques. But, due to a large number of variables involved, prediction becomes difficult. An element of subjectivity remains embedded in weather forecasting.

In the early years of aviation, all accidents while negotiating convective clouds were attributed to a single factor i.e. thunderstorm. The Thunderstorm Project (1946-47) established a variety of hazards within a thunderstorm<sup>2</sup>. The effect of weather is now well recognised due to refined accident investigation methods. Improved observational systems have led to the discovery and understanding of a variety of weather hazards. Study of accidents by Fujita led to the discovery of *micro burst*<sup>3</sup>. Weather and aviation related research led to the discovery of jet streams, mountain waves, Clear Air Turbulence (CAT), etc.

Ground-based, airborne and seaborne military and civilian observation platforms collect data continuously for analysis and for forecasting weather. Over the years, the ability to collect wide-ranging data has improved. As a result, forecasts are more accurate and reliable nowadays. Analysis of data enables identification of periods of calm or good weather in stretches of difficult weather conditions. Realistic plans, which take into account favourable situations, guarantee higher rates of success.

- 
2. Project Thunderstorm (1947) was undertaken by the US Weather Bureau, the US Air Force and the US Navy to study the phenomenon of thunderstorms and to make flying safer. An audio-visual resume of the project presented by AIRBOYD.TV is available at <http://www.youtube.com/watch?v=zvYr2FiP3jE>, accessed July 11, 2011.
  3. Online Encyclopaedia Britannica, available at <http://www.britannica.com/bps/search?query=microburst>, accessed on July 11, 2011.

Terrain relates to a piece of ground, especially with reference to its physical character or military potential. It also refers to the lie of the land and the vertical and horizontal dimensions of the surface. Terrain features can affect weather and climate patterns. This explains the rain in the coastal areas, the low clouds and rain in the eastern states of India and the dust storms in the Rajasthan desert. Terrain helps in determining weather patterns. Thus, separated by a few kilometres, the windward and the leeward sides of a mountain have different weather patterns; at times, they may differ phenomenally in their levels of precipitation or timing. Like weather, terrain constrains airlift and their effects are often overlapping. A major decision like delivery by means of a para-drop or a free-drop is often dictated by terrain.

#### **IMPORTANCE OF WEATHER AND TERRAIN**

There is a popular belief that today's aircraft with state-of-the-art avionics and ground assistance can fly in any weather condition and can evade all types of terrain. The fact is that in spite of the most sophisticated on-board and ground-based navigation and landing aids available to the modern aircraft, the basic requirement of terrain and meteorological information and weather forecast for airlift has not changed. If at all, the importance has only increased. Airlift missions still depend on accurate weather observation and reliable forecast. Under visual flight conditions, an observation or forecast error of a few hundred metres may not alter a decision to land. But under instrument flight conditions, at airfields equipped with the instrument landing system, if an aircraft is permitted to land in low visibility, an error of observation of a few metres can prove critical. An aircraft that takes off from Chandigarh (1,012 ft Above Mean Sea Level - AMSL) has to be sure of the temperature at Leh (10,682 ft AMSL) to determine the permissible all up weight and, hence, the capacity to carry passengers and supplies to Leh. Thus, judiciously planned early morning sorties enable airlift of maximum payload. According to the United States Department of Transportation (DOT) statistics, weather accounts for

more than 40 percent of all flight delays, costing the passengers \$6.7 billion.<sup>4</sup>

During Operation Imminent Thunder (Gulf War 1991), amphibious landings were planned on the Saudi coast to put psychological pressure on Iraq. But the hovercraft could not land due to strong surface winds. The mission had to be aborted after two attempts. Strong winds at that time of the year were ignored in that region. As per post war analysis of Operations Desert Storm and Desert Shield, weather conditions had played a major role during these operations. Some analysts are of the opinion that the coalition forces had faced a steep learning curve in coming to grips with weather predictions throughout the operations.<sup>5</sup>

For tactical reasons, low flying is a considered option. Nap of the earth flying is integral to most special operations. Operation Neptune Spear, that led to the killing of Osama Bin Laden, owes its success, among other reasons, to accurate knowledge of terrain that enabled US helicopters to enter Pakistani air space, making use of blind spots in the radar coverage due to the hills. Sound knowledge of the mountainous terrain and nap of the earth flying technique further facilitated their undetected flight to the objective<sup>6</sup>. Precise information about terrain is critical to avoid collision. Terrain (altitude) directly affects the payload too. It affects the range and performance of radars and terrestrial radio navigation systems. In hilly terrain, station keeping becomes difficult during formation flying. Landing runs increase and, therefore, aircraft require longer runways in high altitudes; payload also reduces. The Rate of Descent (ROD) of parachutes increases on a high altitude Drop Zone (DZ) resulting in a greater impact on landing and a higher rate of injuries. Hilly or mountainous terrain strongly impacts the construction of airfields and the orientation of their runways. Certain

- 
4. Jim Glab, *Weather and Flight Cancellations: A Behind-the-Scenes at What Happens When Weather Causes Flight Cancellations*, March/April 2011, available at <http://www.executivetravelmagazine.com/articles/print/weather-and-flight-cancellations>, accessed on July 08, 2011
  5. Bales Fred, "Winter Weather in the Desert: Another Obstacle," *The Philadelphia Enquirer*, January 23, 1991.
  6. Press Release Number: PR.152/ 2011, dated May 03, 2011, *Death of Osama bin Ladin: Respect for Pakistan's Established Policy Parameters on Counter Terrorism*, Ministry of Foreign Affairs, Pakistan, available at [http://www.mofa.gov.pk/Press\\_Releases/2011/May/PR\\_152.htm](http://www.mofa.gov.pk/Press_Releases/2011/May/PR_152.htm), accessed July 18, 2011

DZs/ LZs (Landing Zones) cannot be used during the monsoons and when there is snowfall. Terrain appreciation is important for airlift operations.

Research and Development (R&D) agencies work relentlessly to resolve the problems resulting from adverse climate, weather and terrain. Detailed and accurate terrain intelligence is necessary to determine the requirements for new means of transportation, types of shelter and construction, weapons, and clothing. It is a basic requirement in developing new equipment and in the maintenance and modification of existing equipment. Knowledge of terrain and weather helps in avoiding human error accidents like Controlled Flight into Terrain (CFIT).

**Detailed and accurate terrain intelligence is necessary to determine the requirements for new means of transportation, types of shelter and construction, weapons, and clothing.**

#### **WEATHER AND AIRLIFT**

Weather is the state of the atmosphere at a given time and place, with respect to variables such as temperature, moisture, wind velocity and barometric pressure, etc. Weather phenomenon affecting airlift can be grouped as follows:

- Moving air e.g. surface winds, wind shear, jet streams and turbulence.
- Water in different forms (hydrometeorology) e.g. rain and snow.
- Visibility e.g. fog, mist, haze, smog, dust storm, volcanic ash, dust haze and smoke haze.
- Electrical phenomena e.g. lightning.
- Aircraft icing.

Cloud and sky cover, humidity, precipitation, surface wind, refractive index, wind-chill factor, illumination and visibility influence airlift in many ways. Critical weather phenomena like thunderstorms, turbulence, gusts, wind shear, heavy snowfall, or low visibility induced by fog, mist or haze reduce safety margins and sometimes result in incidents and accidents. Impact of weather differs for various phases of flight. Wind shear, fog,

heavy snowfall and low visibility affect landing and take-off. Clear air turbulence is a characteristic en route hazard. Smaller aircraft with fewer aids are affected more than the larger aircraft. Para-drops are affected profoundly by weather conditions.

Aircraft, weapons and equipment of today – radios, radars, lasers, infrared radiation seekers, missiles and jammers – are extremely sensitive to atmospheric parameters. Weather affects even the equipment on the ground, thereby limiting operations. In May 2011, two Mi-17 helicopters deployed to ferry the Raksha Mantri, Mr A.K. Antony and his entourage on tour of the forward areas in Rajasthan could not get airborne because of excessive heat, leading to technical snags. The failure to start up the aircraft was attributed to batteries not giving optimal power in hot weather conditions.<sup>7</sup>

Accurate and timely weather information is an essential factor in conducting all phases of airlift operations. The climatology of an area of interest is an important consideration during the planning stage. Measurements of temperature, precipitation, ceiling and visibility affect equipment and supply drops. During planning and execution of airlift missions, the integration of accurate and timely weather intelligence is important. It provides planners and operators the freedom to make midway corrections in the plans, adjust mission flow, loads, and timing to ensure effective, efficient, and safe mission accomplishment. Additionally, space and atmospheric weather conditions have a significant impact on communications for airlift command and control. Also, a side that can alter weather and terrain to suit its interests has an advantage over its adversary that cannot do so.

### **TERRAIN AND AIRLIFT**

Terrain affects all stages of an airlift. The effects are more pronounced at the time of take-off and landing of the aircraft than during normal flight. Manoeuvrability becomes restricted while flying in mountainous/ hilly terrain. It is a major consideration in selection of a DZ and methods of

---

7. "Red Faces in IAF Over Copter Snag: Problems in Choppers Force Antony, Army Chief To Travel by Road," *The Times of India*, May 05, 2011, p. 9.

delivery by air. Hilly terrain with thick foliage provides a restricted area for supply drops in the eastern sector. The DZs are small, with practically no margin of error on any side. Terrain accentuates weather. Wind Induced Drifts (WIDs) over small restricted DZs can land parachutes in deep ravines, making them irrecoverable. Thus, free-drop rather than para-drop is preferred over certain DZs. Similarly, free-drop is a preferred option while dropping relief material from helicopters for people marooned on small islands and rooftops during floods.

Analysts predict the absence of full-scale wars in the near future. In the days to come, conflicts are likely to involve small, mobile combat units equipped with aircraft, which can land and take off from unprepared or sketchily prepared surfaces. Therefore, intelligence on the terrain and its properties, to be used as an operating environment, will be important. Terrain intelligence is the information on the military significance of natural and man-made characteristics of an area. It is the study of the physical features on the ground for military operations. The quantitative and qualitative need of terrain intelligence is as essential as the need to know weather. Terrains that are generally found in the Indian subcontinent are discussed in the succeeding paragraphs with their relevance to airlift operations.

**Desert:** A desert is an arid area with little or no rainfall. It could be mountainous, rocky or sandy with extremes of temperatures. Air-drop may be possible and advantageous on the soft sandy surface. But helicopter operations may be difficult to manage due to the high temperatures and the dust raised by the downwash (brown ring effect and brownout). Visual navigation may be difficult in the absence of landmarks on the ground.

**Hilly and Mountainous:** Mountains are landforms that stretch above the surrounding area, usually in the form of peaks. Aircraft manoeuvrability is restricted in hilly terrain. Because of the elevations, such terrain is colder than the plains and at, times, wetter than expected. Strong winds and fog are encountered regularly. Take-off and landing runs increase with altitude and the payload reduces, thereby, lowering the overall capacity and performance. It is difficult to find DZs of reasonable sizes for para-drops. Slight inaccuracies in drops over restricted DZs can land supplies

in inaccessible areas. Rendezvous of troops dropped in the hills may take a long time. Mass para-drops are rarely possible due to the restricted nature of the terrain. Besides, the rarefied atmosphere of the high altitudes results in increased rate of descent of parachutes, leading to injuries to paratroopers and damage to equipment. Ground undulations also contribute to landing injuries to troops. Mountain weather necessitates acclimatisation, use of breathing oxygen and special clothing.

**Jungle:** A jungle is characterised as a rainy and humid area with impenetrable vegetation. It is generally found within the tropics, near the equator. The climate varies with location. Close to the equator, there are heavy rains all the year round. Farther from the equator (India and Southeast Asia), there are distinct wet (monsoon) and dry seasons. It is difficult to find clear areas to be used as DZs or LZs. They offer possibilities for Special Heliborne Operations (SHBO) rather than air-drops. Very little visual terrain association can be accomplished because of the foliage.

**Snow:** This type of terrain experiences extended periods of sub-zero temperatures and the ground is generally covered with ice or snow, particularly during the winter season. Such terrain may be suitable for airlift by helicopters with specially prepared landing areas. Air-drop of supplies and equipment may be possible on both ice surface and snow. Snow also offers a soft landing surface for para-drop of personnel.

**Marshland:** This is typical marshy and barren terrain. The ground surface remains inundated for a greater part of the year due to rain. During the remaining part of the year, scattered patches remain wet. Though some places look dry, they actually have slush underneath and the ground gives way. The Rann of Kutch is generally flooded from June to October by sea water, creating salt lakes. The ground remains inundated and there are salt deposits because of the sea water. When the monsoon abates, the waters recede, leaving behind a morass, which gradually dries up and turns into pastures. It is like a desert – flat, firm and quite bare except for a few islands with scanty plant growth. The surface is generally unsuitable for effective aerial delivery.

**Urban Terrain:** It includes man-made structures like buildings, roads, rails, bridges seaports and airports, etc. It represents the environment in the context of urban warfare. The increasing focus on terrorism and insurgency indicates that combat in built-up areas is unavoidable. Aerial delivery of troops during the terror attacks in Mumbai (26/ 11) was an operational necessity. Such situations are expected to arise more often in the future. Besides, humanitarian assistance often entails airlifts into urban terrain.

**Islands and Coastal Terrain:** Islands and coastal terrain pose a grave challenge due to their proximity to the sea. While landing operations are the same as on airfields elsewhere, air-drops are complex and weather over such terrain makes operations even more intricate. Errors in accuracy of drops can spell disaster. Use of life jackets and other floatation equipment is a necessity and is at the cost of arms, ammunition and other combat equipment. Jettisoning the parachute and avoiding entanglement with the canopy and the suspension lines in the water is a difficult exercise.

## MITIGATION

It is possible to tone down the severity of some effects of weather to suit the requirements of the operations. The capability and capacity of aircraft, parachutes, and the men who operate them, matters in dealing with the effects of weather and terrain. Aircraft are fitted with equipment to achieve favourable conditions in a limited or confined space. These systems can be operated by the aircrew at will, or could be programmed to function automatically. Temperature, pressurisation and illumination control are means of overcoming weather. They help optimise conditions in the cockpit and in the cargo compartment. It is also possible to mitigate the effect of weather on the aircraft surfaces using chemicals and electromechanical devices. They suppress and/ or neutralise the effects of weather. Aircraft weather mitigation can be thought of as a continuous process, with the need to avoid all adverse weather at one extreme and the ability to safely operate in all weather conditions, at the other.

The size and capacity of an aircraft determines its ability to carry equipment to mitigate weather. Smaller aircraft tend to get thrown about in turbulent

weather. An air-ambulance, Pilatus PC-12, crashed in Delhi amid bad weather and high-velocity winds on the night of May 25, 2011. Shortly before the crash, the pilot had communicated to the air traffic control that he was facing bad weather. The aircraft then vanished from the radar. According to some sources, when the aircraft was cleared by the Air Traffic Control (ATC) to descend, it appeared to climb further before descending at a very steep rate and crashing. There was no cockpit voice recorder or flight data recorder on board since such small aircraft usually are not equipped with heavy devices<sup>8</sup>.

Technology and innovation has led to improvements and enhanced flight safety. This has also led to greater operational capabilities of aircraft in varied weather conditions. Improvement in aircraft and parachute performance and ability to safely operate in adverse weather further enhances airlift capability. The following developments illustrate the trends:

- Thrust reversers improve braking.
- Anti-lock braking systems avoid skidding.
- Grooved runways improve traction in rainy weather.
- Heated leading edges reduce ice accumulation.
- De-icing fluids clear airframes of ice accumulation.
- Lightning detection systems indicates lightning discharges.
- Crosswind landing gear improves crosswind-landing limits.
- Gyroscopic instruments enable flying in reduced visibility conditions.
- Electrical shielding prevents damage to aircraft from lightning strikes.
- Autopilots and auto-throttles help maintain established flight paths.
- Gust alleviation systems reduce the ill effects of turbulence.
- Flight Management Systems (FMS) control piloted/autopilot-assisted flight.
- Auto-land systems enable a hands-off approach and landing.
- Enhanced turbulence mode radar identifies turbulence.
- Ram air parachutes with good glide ratios can counter strong winds.
- Improved lighting (aircraft/airfield) enables operations at night and in poor visibility conditions.

---

8. *The Asian Age*, May 27, 2011, available at [//www.asianage.com/india/dgca-points-high-velocity-winds-weather-plane-crash-051](http://www.asianage.com/india/dgca-points-high-velocity-winds-weather-plane-crash-051), accessed July 13, 2011.

- The Instrument Landing System (ILS) provides precision approach guidance for landing.
- Remotely controlled steerable parachutes ensure precise deliveries.

In desperate times, the effect of adverse terrain has been mitigated in innovative ways. The 1980 Iran hostage crisis was a crucial time for the US. Operation Eagle Claw had failed in the Iranian desert. A second rescue was attempted that aimed at landing a Hercules aircraft in a sports stadium close to the US Embassy in Tehran. To overcome the difficulty of landing a massive aircraft in restricted space in urban terrain, radical modifications were initiated on the aircraft – rockets were fitted at different points on the fuselage of the aircraft to enable vertical take-off and landing. Trials were fairly successful. Incidentally, the hostages were released before the aircraft could be put into operational use<sup>9</sup>. This is a passive way of mitigating the effect of terrain.

A step ahead is active terrain mitigation. It involves physical modification of terrain to support requirements. The US Navy's Construction Battalions (CBs), better known as SeaBees have a history of building bases, bulldozing and paving thousands of miles of roadway and airstrips, and accomplishing a myriad other construction projects in a wide variety of military theatres. They constructed six 8,500+ ft runways at the rate of one runway per 53 days; over 18 km of taxiways; hard-standing to accommodate over 400 bombers, and accommodation for 50,000 personnel and office complexes, on the islands of Tinian and Saipan in a record time of less than a year during World War II. Tinian became the largest and busiest airport in the world in midsummer 1945. Nearly 19,000 combat missions were launched from these islands, including the sorties that dropped the atomic bombs on Nagasaki and Hiroshima<sup>10</sup>.

About 2,600 SeaBees are currently deployed in about 20 different countries around the globe, supporting a variety of humanitarian missions

---

9. "Crash Landing", *Popular Science*, vol. 251, July 1997 (Canada: Bonnier Corporation, 1997), p. 32.

10. "The Use of Tinian Island During World War II," available at [http:// web .mst .edu/~rogersda/ umrcourses/ ge342/ Tinian %20Island .pdf](http://web.mst.edu/~rogersda/umrcourses/ge342/Tinian%20Island.pdf), accessed July 23, 2011.

**China is among the few countries that invest in weather modification.** and contingency operations. SeaBees were among the first forces in Afghanistan after the 9/11 attacks, to upgrade and repair airfields. Portions of two battalions have been deployed there since January 2009.<sup>11</sup>

### CONTROL OF ELEMENTS OF NATURE

In the early years of aviation, it was considered prudent to avoid weather and terrain. Then, technology made it possible to mitigate the undesirable effects of these elements of nature. The next logical step in this direction is to control them, because such ability can enable smooth airlift operations. Control of weather implies modification of atmosphere to achieve desired effects. Control over a limited area, mainly to cause rain, has been done in many countries. Control over a larger area and for more time has relevance to agriculture. As atmosphere is a continuous entity without borders, any effort to change it can affect regions beyond the geographical limits of a country. Therefore, environmental issues like control of weather, climate change and global warming, etc. acquire a geo-political hue. Militaries and governments of neighbouring countries, environmentalists, social activists, naysayers and the media even within the country oppose the efforts. The debate between security and development, on one side, and the conservation of environment, on the other, goes on.

China is among the few countries that invest in weather modification. During the 2008 Olympics in Beijing, the Chinese Meteorological Department had forecast rain over the main stadium hosting the Opening Ceremony. The humidity in the vicinity of the stadium touched 90 percent. It is believed that the Chinese Weather Modification Office made a deliberate attempt to prevent the rain clouds from drifting in and causing rain over

---

11. "Additional Seabee Battalions Deploying to Afghanistan" Story Number: NNS091222-01; Release Date: 12/22/2009 7:58:00 AM on Navy.mil the official website of the US Navy, available at [http://www.navy.mil/search/display.asp?story\\_id=50316](http://www.navy.mil/search/display.asp?story_id=50316), accessed on August 04, 2011.

the stadium. They fired rain dispersal rockets from different sites.<sup>12</sup> It was probably because of those rockets that the clouds dissipated on the site, causing more than 100 mm rain, leaving the stadium dry. This type of wilful manipulation of weather has localised effect. Cloud-seeding, as it is called, is a relatively well-known practice that involves shooting various chemicals into the clouds, such as silver iodide, salts and dry ice, that bring about the formation of larger raindrops, triggering a downpour. Chinese scientists seem to have perfected another technique that reduces the size of the raindrops, delaying the rain until the clouds move on.<sup>13</sup>

In the late Sixties, the US prolonged the monsoon in Vietnam (Project Popeye). Artificially produced excessive rain resulted in flash floods and blocked the enemy vehicles along the Ho Chi Minh Trail, which were then attacked by the US aircraft.<sup>14</sup> According to some estimates, the US forces reaped rich dividends by controlling the weather. There are some who believe that in one respect, the Americans also paid a price for the manipulation of weather. In November 1970, the Son Tay Raid (Operation Ivory Coast) for the rescue of 61 American Prisoners of War (POWs) failed because the prisoners had been transported to another location, Dong Hoi, due to the problem of flooding caused by Operation Popeye.<sup>15</sup>

Another much talked about, but less known American project for weather control is the High-frequency Active Auroral Research Project (HAARP). It is a ground-based weapon being developed in Alaska. The device focusses radio-frequency energy (a beam of more than 1.7 gigawatts) into the atmosphere, which ricochets when it encounters the ionosphere. The radiations bounce back onto the earth in the form of long waves, which penetrate living organisms, the ground and the oceans. It is said that it can

---

12. Ajey Lele, "China's Experiments with Weather Modification: A Cause for Concern" available at [http://www.idsa.in/idsastrategiccomments/ChinasExperimentswithWeatherModification\\_ALele\\_121009](http://www.idsa.in/idsastrategiccomments/ChinasExperimentswithWeatherModification_ALele_121009), accessed July 21, 2011.

13. Barbara Demick, "China Plans to Halt Rain for Beijing Olympics", *Los Angeles Times*, January 31, 2008 available at <http://travel.latimes.com/articles/la-trw-rain31jan31>, accessed July 12, 2011.

14. Lele, n. 12.

15. Al Hemingway, "Daring POW Raid at Son Tay", *VFW Magazine*, November 1995, available at [http://www.pjsinnam.com/vn\\_history/stories/Son\\_Tay.htm](http://www.pjsinnam.com/vn_history/stories/Son_Tay.htm), accessed on August 16, 2011.

influence the environment in several ways. It can control the physical and mental processes of human beings; jam global communications systems; change weather patterns over large areas; interfere with wildlife migration patterns; and, unnaturally impact the earth's atmosphere.<sup>16</sup> Some people believe that the uncommon natural phenomena like the Indonesian tsunami (December 2004), floods in Pakistan (July 2010), the cloudburst in the Leh-Ladakh region (August 2010)<sup>17</sup> and the tsunami and earthquake in Japan (March 2011) could have been the result of similar experiments conducted to control weather.

According to Dr. Nick Begich and Jeane Manning, in 1958, Dr. Edward Teller, the father of the H-bomb proposed to blast a portion of coastline off the map of Alaska. It was viewed as an effort to prove that nuclear explosions could be used for geographical engineering. Project Chariot, a part of Project Plowshare at Lawrence Radiation Laboratory, aimed at exploding six thermonuclear bombs underground at Cape Thompson, Alaska, to dig a harbour.<sup>18</sup> Teller was quoted as telling the Alaskans, "If your mountain isn't in the right place, drop us a card."

The veracity of such stories and media reports is doubtful and cannot be verified because such efforts are shrouded in secrecy.

## A PEEP INTO THE PAST

*Weather and terrain have a greater impact on battles than any other physical factor, including weapons.*

— G.R. Svoboda<sup>19</sup>

Outcomes of many a war in history have been attributed to the effects of weather and terrain. Forces have accrued advantage by paying heed and

---

16. Jeane Manning and Dr Nick Begich, "Angels Don't Play This HAARP: Advances in Tesla Technology," extract available at <http://www.biblioteca-tercer-milenio.com/mispdfs/HAARP.pdf>, accessed July 05, 2011.

17. "Climate Himalaya," available at <http://chimalaya.org/2010/08/16/the-devastating-flood-from-cloudburst-in-leh-ladakh-a-chinese-experiment-of-weather-bomb-or-an-effect-of-the-underground-ufo-bases-in-the-himalayas/>, accessed on August 17, 2011.

18. Manning and Begich, n. 16.

19. G.R. Svoboda, *Military Weather History*, Army Weather Support (A. Deepak Publishing, 1986), available at <http://space.au.af.mil/aberdeen/history.htm>, accessed July 11, 2011.

suffered heavily by disregarding weather and terrain. Contempt of these elements of nature has resulted in misery and has led to many mission failures. Yet, weather does not form a Principle of War. Weather and terrain may appear to be irritants that hinder smooth conduct of operations but they cannot be treated with disdain. Each situation in the past and each new set of circumstances of the future is unique and different. Lessons learnt and the conclusions drawn from a situation cannot be applied as templates but situational similarities may demand typical responses. The basic characteristics of weather and terrain do not change. Therefore, responses based on past experiences can make a favourable difference in the outcome in repetitive situations. The cognitive approach can save resources, effort and precious time.

It may be argued that the Iran hostage rescue is not relevant in the Indian subcontinent or what happened in World War II is not relevant now. A hostage rescue attempt like Operation Eagle Claw (Iran) may not be relevant in its entirety but blinding due to dust (brownout) is a problem of helicopter operations in the deserts and is as relevant in the Thar Desert as it was in Iran. More similarities can be drawn, and learning value can be attached. Some instances of airlift from the past are illustrated here to bring out the marked influence of weather and terrain on airlift operations.

### *Normandy Landings (D-Day)*

The battle of Normandy launched the invasion of German-occupied Western Europe during World War II by the Allied forces. It commenced on June 6, 1944, with the Normandy landings (Operation Neptune, commonly known as D-Day). An airborne assault (nearly 12,000 troops) preceded an amphibious assault (almost 7,000 vessels). Nearly 160,000 troops crossed the English Channel on June 6, 1944. More than three million troops were in France by the end of August 1944.

It was a massive joint Services operation, with naval, aerial and paratroop elements supporting the main amphibious assault. They required specific meteorological conditions: a late-rising full moon, a receding tide, good visibility, sparse cloud cover and low winds. The unreliable Channel weather made this an elusive combination. After a postponement, the operation was

scheduled for June 6, 1944; even then, conditions were less than ideal, with blustery seas and 50 per cent cloud cover.<sup>20</sup>

Initially, meteorologists had predicted inclement weather – rain and winds, unsuitable for a para-drop. The timing of the invasion by the Allied forces was finally dictated by a favourable weather forecast. The window of opportunity for launching an invasion was limited to only a few days in each month as a full moon and a spring tide was a must. On June 4, conditions were clearly unsuitable; high winds and heavy seas made it impossible to launch landing craft, and low clouds made flying difficult. However, based on the weather reports transmitted by the HMS *Grindall*, Eisenhower's chief meteorologist predicted a slight improvement in the weather for June 6. It was a precarious situation. After much discussion, Eisenhower decided to launch the invasion. The German weather analysts, on the other side, felt that the weather would prohibit successful crossing of the English Channel. This forecast contributed to the unsuspecting mood of the Germans on that day. They believed an invasion would not be possible for several days. As per some accounts, troops stood down and, many senior officers, including Rommel, were unavailable. They took the Allied operation lightly, thereby, fatally compromising their ability to repel the landings.

The Allied forces were rewarded for their perfect analysis and for availing the opportunity that came their way; and the Germans paid for their disdain for weather.

### ***Operation Husky (1943)***

Operation Husky, was a World War II campaign, in which the Allies took Sicily from the Axis Powers. It was an amphibious and airborne operation, followed by six weeks of land combat. It marked the beginning of the Italian Campaign. Eisenhower's planners considered three important factors: the island's terrain, the location of the major airfields, and the location of the enemy forces.<sup>21</sup> But they disregarded weather.

---

20. Phil Edwards, "D-Day: The Normandy Landings," BBC History available at [http://www.bbc.co.uk/history/worldwars/wwtwo/ff7\\_dday.shtml](http://www.bbc.co.uk/history/worldwars/wwtwo/ff7_dday.shtml), accessed July 14, 2011.

21. E. M. Flanagan Jr., *Airborne - A Combat History of American Airborne Forces* (New York: Ballantine Books, 2002), p. 75.

A combined US-British team at Algiers developed the airborne phase of the operation. It was launched from bases in North Africa. Strong winds of up to 45 miles per hour blew the troop-carrying aircraft off course and the US force was scattered widely over southeast Sicily. The result was that around half the US troops failed to rendezvous. One-eighth of the Combat Team was dropped as planned and the remaining was scattered some 60 miles on the island<sup>22</sup>. Only 12 out of 147 British gliders landed on target, and 69 crashed at sea.<sup>23</sup> A reinforcement drop resulted in friendly-fire casualties. Despite forewarnings, Allied anti-aircraft guns, both ashore and aboard US Navy ships, shot down 23 of the transport aircraft as they flew over the beachhead.

The Allied forces suffered heavy losses for ignoring weather. Their commanders were forced to reassess the use of airborne forces after the many inaccurate drops and the friendly fire incidents. Improved training and some tactical changes kept the airborne units in the war<sup>24</sup>.

### ***Berlin Airlift: Black Friday (August 13, 1948)***

Post-war Germany was divided into three sections: the United States, Great Britain and France controlled the Allied part. The Soviet Union dominated the other part. The city of Berlin, although located in the Soviet half, was similarly divided – West Berlin, occupied by the Allies and East, by the Soviets. In June 1948, the Soviet Union attempted to control all of Berlin by cutting off surface traffic to and from the city of West Berlin. They wanted to starve out the population and cut off their business, to gain control. The Allies responded with daily airlift of much needed food and supplies into West Berlin.<sup>25</sup>

---

22. Ibid., p. 81.

23. "Allied Invasion of Sicily," available at [http:// en .wikipedia .org/ wiki/ Allied \\_invasion \\_of \\_Sicily](http://en.wikipedia.org/wiki/Allied_invasion_of_Sicily), accessed on July 11, 2011.

24. "Airborne Forces" available at [http:// en .wikipedia .org/ wiki/ Airborne\\_ forces](http://en.wikipedia.org/wiki/Airborne_forces), accessed July 14, 2011

25. Introduction to The Berlin Airlift, available on the official website of Harry S. Truman Library, available at [http:// www .trumanlibrary.org/whistlestop/study\\_collections/berlin\\_airlift/large/](http://www.trumanlibrary.org/whistlestop/study_collections/berlin_airlift/large/) accessed July 14, 2011.

Commencing on June 24, 1948, the Berlin Airlift reached a plateau in July 1948. Gen William H. Tunner of the Over the Hump (India-Burma-China) airlift fame, introduced small changes and streamlined the procedures thereby reducing the turnaround time and enhancing the daily tonnage. The Berlin airbridge had a peculiarity – there were many bases to feed aircraft into Berlin, but only two airfields were available to accept the aircraft that had to fly in restricted air corridors over or near the Soviet airfields. If the aircraft could not land due to any reason, they had only a 20-mile radius to orbit in.

On August 13, 1948, the visibility suddenly dropped again due to low clouds that hung at the level of apartment buildings surrounding the Tempelhof airfield. A sudden cloudburst obscured the runway from the tower and the radar could not penetrate the rain. The radar controllers and the ground control approach controllers lost control over the situation. One C-54 overshot the runway, crashed into a ditch and burst into flames; the crew got out alive. Another C-54, coming in with a maximum load of coal, touched too far down the runway. Harsh braking to avoid the burning C-54, led to tyre bursts. Another aircraft realised too late that it was heading for an auxiliary runway, still under construction. It slithered, slipped and ground looped. The Air Traffic Control (ATC) began stacking the aircraft that were coming in at a three-minute interval. Soon the stack was packed from 3,000 to 12,000 ft in the air space over the runway<sup>26</sup>.

Poor visibility, several aircraft stacked overhead, more joining in at regular intervals, confusion on the ground, and in the air – the conditions were ripe for more mishaps. Gen Turner, whose aircraft was also airborne at that time, took immediate action to prevent more accidents. Through the ATC, he ordered all other aircraft in the stack to return to their bases. A much bigger disaster was thus averted.

Weather was the cause of a near complete disaster on Black Friday. Among the steps taken to make airlift safe, was the decision to allow all airlift aircraft a single pass at landing. If for any reason the pilot was unable to land in the first approach, he was ordered to return to his home base in

---

26. D. M. Giangreco and Robert E. Griffin, *Airbridge to Berlin –The Berlin Crisis of 1948, its Origin and Aftermath* (California: Presidio, 1988). p. 122.

West Germany. This prevented stacking. Another rule introduced by Tunner was to adhere to instrument flight rules under all weather conditions. In the constantly changing weather conditions in Berlin, this led to standard operating procedures.

Adverse weather in urban terrain can bring airlift operations to a standstill even in peace-time. Preparedness through realistic training and innovative thinking can help overcome obstacles.

*Operation Cactus: The Maldives, November 1988, Revisited*

In a daring airborne operation, the Indian armed forces rescued President Maumoon Abdul Gayoom of the Maldives on November 03, 1988. Two IL-76 aircraft airlifted troops from Agra to Hulule airport. The President was rescued with relative ease. Seemingly, it was a copybook operation, conducted flawlessly. A closer scrutiny revealed areas that would deserve a relook if a similar operation were to be undertaken in the future. One such aspect was the decision whether to para-drop or to land the troops on the island. The final decision was influenced largely by the limitations posed by the factors of weather and terrain.

Among the uncertainties at the time of the launch of the operation was that of control over the runway at Hulule. One was not sure whether the friendly forces or the terrorists were in control of the airfield. The nationalities and the levels of training of the mercenaries were unclear. Therefore, plans could not be based on the enemy's known capabilities and style of operation. Experienced mercenaries would strive to wrest control of the airfield at the earliest. It was a matter of chance though that the terrorists had ignored the island of Hulule with the main runway. It was a fluid situation when the ILs took off from Agra. A flying time of four long hours from Agra to Hulule could alter that state and enable the terrorists to block the runway and render it insecure for landing. They could take positions around the runway and fire at the landing aircraft. Availability of shoulder-fired missiles with the terrorists would raise the risk. In that eventuality, landing an aircraft would endanger the complete force. Returning to Sulur, or to Chennai, the nearest Indian air bases, with the full aircraft load could have been a Hobson's choice.

A para-drop rather than a landing would have addressed this issue summarily.

A few facts about Maldives and some calculations will establish the impracticability of a para-drop. Each aircraft had nearly 120 troops. Initially, it was contemplated that 60 from each aircraft would be para-dropped if the runway was unsafe for landing. In November 1988, the runway at Hulule measured about 7,600 ft, with water all around. So close was the sea that, in most places, one could throw a stone from the runway shoulder into the water. The distance from the edge of the runway to the seashore varied (generally about 300-400 ft). The length was much in excess of that required to drop 60 para-troopers (see Table 1 for details).

**Table 1: Simple Calculation\* of DZ Length (for IL-76) for Para-drop**

DZ Length for Para-drop (in feet) = $S \cdot R \cdot N$ , where S = Aircraft Speed in feet per second (fps), R = Jump Rate and, N = Number of Jumpers	
Aircraft Drop Speed, S	= 260 ± 10% kmph ≈ 250 kmph (say) ≈ 227.8 feet per second
Jump Rate (Side Door Exit), R	= 0.8 seconds/ jumper (for calculation)
Jump Rate (Aft End Exit), $R_1$	= 0.7 seconds/ jumper
Number of jumpers exiting simultaneously from each door for minimum spread on the ground (max 126)	= 30 from each Side Door + two sticks of 33 each from the Aft End
Ideal number of jumpers exiting simultaneously from each door for minimum spread on the ground (for 60), N	= 14 from each Side Door + two sticks of 16 each from the Aft End
Minimum DZ Length for 60 jumpers (without catering for overshoot or undershoot for error), in feet	= $S \cdot R \cdot N = 227.8 \cdot 0.8 \cdot 14 \approx 2552$ feet
* For simplicity of calculations, allowance for undershoot/ overshoot error is being disregarded.	

In absolute no wind condition, if the troops exit over the runway (allowing for the forward throw on exit), they land on the runway. Since, the Maldives are located north of the equator, easterly winds (about 20 kmph) were expected. Actual weather was not known. In any case, Wind Induced Drift (WID) on the parachutes had to be offset to prevent the troops drifting into the sea. WID can be approximated on the basis of actual or forecast winds (see Table 2).

**Table 2: Simple Calculation of Wind Induced Drift (WID) on Parachutes**

Drift of a Parachute (in metres), $D = K \cdot A \cdot V$ , where $K$ = Constant, depends on the type of parachute (3.0 for personnel parachutes), $A$ = Drop Altitude, expressed in 100s of feet Above Ground Level (AGL) and $V$ = Mean effective wind or velocity of wind in knots
Assigning Values to variables: $K = 3.0$ , $A = 15$ , $V^* = 10.8$
Thus, WID would have been = $3.0 \cdot 15 \cdot 10.8$ = 486 metres $\approx$ 1,600 feet

As can be seen, with winds of a strength of 20 kmph, the drift experienced would have been about 1,600 ft. Exploring the formula further, it can also be concluded that for a variation of every kilometre in the Mean Effective Wind (MEW), there would have been a difference of 80 ft in the drift – a precarious situation. Fully equipped troops drifting into the sea would have been the nemesis of the operation. A streamer<sup>27</sup> or a drifter<sup>28</sup> could not have been dropped at night. Dropping smaller sticks of jumpers to attain progressive accuracy would have increased the number of passes, and thereby the flying activity over the runway, eliminating the surprise and alerting the terrorists. The darkness of the night and absence of any ground references would also have compromised accuracy.

\*. In this case, Mean Effective Wind (MEW), which accounts for the speed and direction of winds at different heights through which the parachute descends, cannot be calculated since actual winds at Hulule were not known at the time of the operation, 20 kmph ( $\approx$  10.8 knots) was generally experienced at that time of the day and year as per data available from different sources.

27. A streamer could be a long piece of paper or cloth with the descent characteristics of a parachute. It is dropped to assess the WID.

28. A drifter is person para-dropped singly for assessment of WID.

Therefore, the idea of a para-drop on the runway was seriously contemplated and sensibly rejected by the planners – a repetition of the history of Operation Mercury (1941) and Operation Husky (Sicily, 1943) was scrupulously avoided. Today's ram air parachutes can offset the effect of winds to a great degree and enable accurate drops in restricted areas. Use of ram air canopies with control and guidance can ensure reasonably accurate supply drops of small consignments also.

### **WEATHER AND TERRAIN: NOT ALWAYS IMPEDIMENTS**

*The rain fell alike upon the just and upon the unjust, and for nothing was there a why and a wherefore.*

— W. Somerset Maugham,  
*Of Human Bondage*, 1915

Weather and terrain are unavoidable elements of nature – not necessarily adversaries of airlift operations. Like gravity, they are impartial to all. They favour no side. But their effects could be an advantage for a side or detrimental to its interests. What is a blessing for one side could be a curse for the other. The effects on airlift operations are conditional and situational. A thick layer of clouds and strong surface winds, which inhibit an air-drop, are sure to gratify a defending force. A given weather condition could be a boon or a bane for the same side, depending upon the need. Strong winds are hazardous for a mass drop with static-line deployed parachutes. But a special operation involving High Altitude High Opening (HAHO) insertion could benefit immensely from strong tail winds by way of additional stand-off distance. Similarly, a layer of low clouds can conceal a High Altitude Low Opening (HALO) team.

Mountainous terrain, which poses hurdles to airlift operations, was used cleverly during Operation Neptune Spear. The Pakistanis' audacity in Kargil may have been prompted partly by their perceived inadequacies in the logistics infrastructure on the Indian side (to move men and material to that region) and India's inability to respond decisively and speedily due to terrain.

Weather and terrain potentially benefit and hurt each warring side in different ways. Theoretically, they influence the freedom of operation to an

extent that they:

State I. Favour friendly forces and are detrimental to the enemy.

State II. Favour both, the friendly forces, and the enemy.

State III. Detrimental to both, the friendly forces and the enemy.

State IV. Detrimental to the friendly forces and favour the enemy forces.

Ideally, operations must be planned when the effects of weather and terrain favour the friendly forces and hinder the enemy operations (State I) and must not be planned when conditions favour the enemy and hinder the friendly forces (State IV). However, given a set of weather and terrain conditions, the state can be manipulated and the operational freedom can be enhanced considerably through:

- Good equipment for sensing, observation and data collection.
- Means for data processing, analysis and dissemination.
- Aircraft and delivery systems that can mitigate the adverse effects.
- Use of equipment to mitigate adverse effects.
- Reliable weather and terrain intelligence.
- Availability of real-time data and its analysis.
- Judicious/cunning exploitation of windows of opportunities.
- Awareness through education and training.
- Greater stress on technical knowledge of geology, forestry, climatology and meteorology, etc.
- Eternal preparedness.
- Use of aids to enhance performance.
- Control of weather and modification of terrain.
- Employment of tactics to circumvent adverse conditions.

Ability to airlift in adverse conditions can accrue gains against terrorists and insurgents. In areas with truly bad weather and difficult terrain, the adversary may be forced to remain confined to shelters. Accurate and reliable weather information and terrain intelligence, audacious planning and precise delivery of teams of special forces can lead to success.

## DEALING WITH WEATHER AND TERRAIN

Risk = f (Weather, Terrain, Exposure, Vulnerability)

Risk to airlift operations is a function of weather and terrain, and the exposure and vulnerability of the airlift platform to these elements of nature. It follows that risk can be reduced by mitigating or controlling weather and terrain, reducing the exposure of the airlift forces to the elements of nature and by lowering vulnerability.

Delivery platforms (aircraft) and equipment are important considerations while evaluating risk through weather and terrain. Use of aircraft with Vertical Take-off Landing (VTOL) capability like the Bell Boeing V-22 Osprey can overcome problems of landing in restricted areas/short runways. The Boeing CH-47J Chinook is another versatile heavy lift helicopter that has proved itself in different terrains and weather in many wars, from Vietnam to Afghanistan. Its hovering capabilities enable deliveries in the most difficult terrain.

An earthquake in Sikkim (September 2011) posed the problem of the aid workers and the relief material reaching the quake hit areas due to landslides. Bagdogra, the runway nearest to the epicentre, did not have night landing facilities. But two C-130J Super Hercules aircraft could land there because they had night landing equipment and capability. Relief material and a team of 200 National Disaster Relief Force (NDRF) personnel could be landed at Bagdogra beyond daylight hours.<sup>29</sup> Ruggedness and operability in most types of terrain and weather conditions is an important criterion while selecting aircraft and other equipment for operational use.

Some of the limitations can be overcome with ingenuity and innovativeness.

Such crises cannot be ruled out in the future. Non-availability of a runway due to a natural cause or due to enemy action can jeopardise operations in a big way. In times of crises, if long stretches of wide roads are available, they can be used for landing personnel and supplies closest to the site of

---

29. Manu Pabby, "For first time, IAF Deploys its 'Special Operation' Aircraft," *Indian Express*, (New Delhi) September 19, 2011), p. 2.

action, in very exceptional cases.<sup>30</sup> A strategic approach to infrastructure development can address this issue. While at it, there is a need to ensure that the roads leading to the airfields are also kept clear of obstructions – mighty airlift aircraft will serve little purpose if the men and material to be airlifted cannot reach the airfields in time. Wide approach roads to airfields, clear of impediments will reduce response times during national emergencies.

Some of the limitations can be overcome with ingenuity and innovativeness. Carrying less fuel and managing sorties in the early hours of the morning enables maximum airlift in high altitude areas.

In India, weather and terrain differ drastically, from Dras and Kargil (sub-zero temperatures and mountainous terrain) to Rajasthan (desert terrain with 45C) to the hot and humid northeast, to the Naxal infested jungles of Madhya Pradesh, Andhra Pradesh and Bihar. Airlift is affected by these natural conditions. Weather satellites give vital information on weather. Unarmed Aerial Vehicles (UAVs) can also be used for real-time weather and terrain related information in areas of interest to buttress airlift operations. Geospatial engineering is emerging as a new field for development dissemination and analysis of terrain related information that is accurately referenced. It is an aid to tactical planning.

The true capabilities of countries to modify or control weather are not in the public domain. Research and development is shrouded in mystery. Glimpses of the capabilities of the US and the China suggest, beyond reasonable doubt, that they are way ahead of the rest of the world. India could jump on the bandwagon for similar research to meet its needs. Learning from others' experiences would be valuable because their past could be any country's future. Collaboration for a humanitarian cause could be top on

**Weather satellites give vital information on weather. Unarmed Aerial Vehicles (UAVs) can also be used for real-time weather and terrain related information in areas of interest to buttress airlift operations.**

---

30. The Pakistan Air Force has done trial landing of fighter aircraft on a road. Some of the Scandinavian countries have plans to resort to use of roads as runways during crises.

the agenda. An option could be to collaborate with other countries that have climate like ours and face weather constraints like we do. It is, however, less likely that the *haves* in these fields would encourage partnership beyond a limit. Therefore, as a last resort, we could carve a lonely path to suit our needs, possibly without affecting others adversely.

There is a need to look ahead and plan holistically. Learning from the experience of others may simplify the path ahead. An integrated plan for the Next Generation Air Transportation System (NGATS) was submitted to the US Congress in 2004. It is expected to enhance the level of operations considerably. A Joint Planning and Development Office (JPDO) coordinates and manages the efforts of various departments and experts from the public and private sectors to achieve NGATS. The JPDO organisation includes eight interagency Integrated Product Teams (IPT), one of which, the Weather IPT, addresses the impact of weather on the safety, efficiency, and capacity of the air transportation system. A similar project could be undertaken in India.<sup>31</sup>

### THE PATH AHEAD

Over the years, the threat perceptions and the scope of military operations have changed. Space offers the fourth dimension of battle. Stratospheric flights are now more common. Low earth orbits are populated with communication and remote sensing satellites, some exclusively for military purposes. Technology, innovation and tactics aim at ensuring that airlift operations are never paralysed due to weather – an *all-weather* force is the ultimate aim. Space weather has, therefore, become a concern. The focus now is on space weather forecasting.

Weather and terrain will continue to affect airlift operations. Research and development will tell us more about the nature of these elements. Technology will present numerous better ways to deal with them. Even with today's technology, it may be possible to plot information on weather,

---

31. The source of this information on NGATS is a paper by H. Paul Stough of NASA Langley Research Centre, Hampton, Virginia, titled: *III Aircraft Weather Mitigation for the Next Generation Air Transportation System*, available [http:// ntrs .nasa .gov/ archive/ nasa/ casi .ntrs .nasa .gov/](http://ntrs.nasa.gov/archive/nasa/casi/ntrs.nasa.gov/) accessed May 17, 2011.

terrain, aircraft performance and aircrew category and visualise a three dimensional path for an aircraft that may be ideal to fly from a point on the map to another. It may also be possible to communicate midway alterations on the basis of real-time updates.

A common and striking feature of airlift operations dedicated to disaster relief missions is the unavailability of landing surfaces for large aircraft in the proximity of the affected people and areas. Most often, even the land routes are blocked and the only means of delivery of medicines, water and food, etc. are helicopters with limited capacity. Crucial time is lost as aid trickles in. In the case of the earthquake in Sikkim, the C-130Js positioned the relief teams and supplies at Bagdogra almost instantaneously but it took enormous effort in terms of helicopter sorties and road transportation to convey the specialists and the aid material to the epicentre near Gangtok, where they were urgently required. Future technologies will seek to airlift mega payloads regardless of the weather and terrain limitations. An Australian firm, Skylifter, is developing a large piloted airship that will carry up to 150 tonnes<sup>32</sup> of payload over a distance of 2,000 km. The airship will be able to carry rural hospitals and disaster relief centres to remote areas in different wind conditions.<sup>33</sup>

## CONCLUSION

Weather and terrain are unavoidable elements of nature that influence all stages of airlift operations significantly. The domain of airlift operations integrates both natural and man-made elements. Yet, for long, there was a tendency to look at these elements as a somewhat isolated, tactical issue. Significant advances in technology are bringing about a shift from traditional, single point stand-up briefings towards continuously updated advice to the airlift formations at every step of mission planning and execution. Awareness has changed attitudes and approach. Weather and terrain now form part of doctrines and are given due importance.

---

32. This is nearly seven times the payload that can be carried by a C-130J Super Hercules and nearly double the capacity of a C-17 Globemaster.

33. "Giant Airship That Can Carry Entire Buildings 2000 km," *The Times of India*, October 06, 2010, p. 21.

Elements of nature are impartial to all users of the air space – friends and foes alike. Howsoever insignificant, nagging or irritating they may appear, their effects on airlift are consequential. Success of aerial delivery depends on availability of authentic real-time information and its analysis. There is need to be proactive rather than reactive to weather. The changed nature of modern warfare places extreme demands on the planners and those executing the operations. On the one hand, weather and terrain provide opportunities, and, on the other, they restrict opportunity.

Collection of information on terrain and weather within the country and on areas of interest outside the country must be a conscious and continuous process. Army patrols, Border Roads Organisation (BRO) units, paramilitary forces, members of expeditions and any other organisations operating in physically inaccessible areas can provide valuable inputs for preparation of the intelligence folders on terrain and their weather patterns. Basic skills of obtaining data on terrain and weather for generating intelligence with a view to assist airlift operations could be included in the curriculum in the training establishments. Folders containing such information using data gathered judiciously and analysed by specialists can be prepared and will be of immense value in times of need. It must be borne in mind that the information contained in such folders would be required for instant use when time would be at a premium.

The effects of weather and terrain on airlift operations can be mitigated but cannot be eliminated completely. A side that can exploit the conditions stands a better chance of success. Technology enables collection and analysis of real-time data, which is most essential for mission planning. Yet an element of uncertainty is embedded in the calculations. Performance characteristics delivery aircraft and parachutes, training and capability of the aircrew and the para-troopers offset some of the ill effects of weather and terrain. Plans may not survive the first onslaught of bad weather but then preparedness is the key. All plans do not translate into reality due to the changing nature of weather. The effort must be to build an ideology that stands the airlift forces in good stead in a majority of situations.

Trends suggest that it shall be possible, in the future, to gather relevant data through satellites, radars and infrared photography. Statistical methods shall enable meaningful analysis leading to selection of appropriate routes for the aircraft and for expeditious preparation of landing surfaces for aircraft operation. This will further support strategic decision-making and delivery of men and material any time, anywhere, despite the constraints posed by nature.



# TRAINING FUTURE ENVIRONMENT LEADERS

MANOJ KUMAR

*The single biggest way to impact an organization is to focus on leadership development. There is almost no limit to the potential of an organization that recruits good people, raises them up as leaders and continually develops them*

— John C. Maxwell

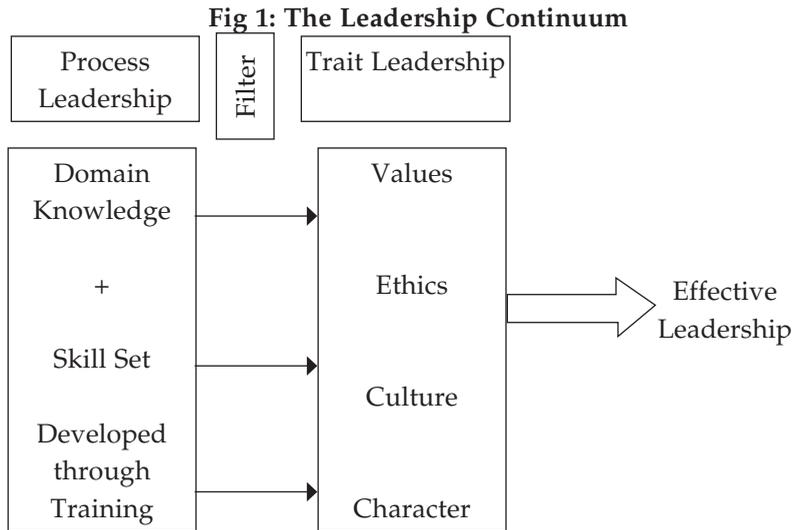
## TRAINING TO BE A LEADER

Are leaders born or trained / developed to become one? Nature or Nurture? This question has been debated threadbare at many a forum. However, it should be adequately clear to the readers from the title of this paper itself that the author believes that true leadership comes about with suitable training. This is not to deny the fact that there are born leaders. On the contrary, there is much evidence of born leaders like Gandhi and Napoleon, to name a few, who rose to lead their followers to many a great struggle and victory when they were presented with the right environment. But the modern-day conviction seems to be that both these aspects of leadership are required to mould a good leader albeit it tilts more towards trained leaders.

---

Group Captain **Manoj Kumar** is a Senior Fellow at the Centre for Air Power Studies, New Delhi.

The root of the debate on whether leaders are born or developed is based on the way leaders are perceived in an organisation or the way they apply their leadership traits to lead a group of followers. The two ways in which leadership is exercised are: (a) by applying domain knowledge and skills, and (b) by using traits that can influence actions. The former is known as *Process Leadership* while the latter is called *Trait Leadership*. It is now believed that while the characteristic of leadership may be learned, the skills and knowledge used by the leader are filtered through his or her inbuilt traits such as values, ethics, culture and character. So even if knowledge and skills contribute directly to the *process* of leadership, the inbuilt attributes give the leader a certain uniqueness. This is how the two theories of the process of 'leadership-building' converge and make it 'whole.' It is, thus, critical that a born leader is bestowed with suitable skills and knowledge, to be able to lead effectively. From this conviction flow the contents of this paper, in which how this expertise may be built by suitable training, is covered. The intention of this paper is not to suggest any systemic changes in the modular training programme in vogue currently. The objective is to suggest a small addition to the course contents. This addition and the way to deal with the subject of environmental and resource efficiency would be different for trainees at different levels. This aspect would be covered in detail subsequently.



The desirability of having environmental leadership in the military establishment cannot be overlooked. Respect for resources, cost-consciousness, operational requirements and ethical/community considerations, all necessitate a military leader to be aware of the environment and to be able to operate in it harmoniously. Every organisation has a particular work environment, which dictates to a considerable degree how its leaders respond to obstacles and opportunities. This is brought about by its legacy of past leaders and the thought-process of its present ones. In his introductory remarks in the treatise on *Military Leadership*,<sup>1</sup> Air Cmde Jasjit has observed, “Clearly the primary business of the soldier is to fight: and that of his military leaders is to ensure that he fights **with maximum capability and effect, with minimum costs.**” The highlighted text actually dictates the envisaged training needs of a military leader. The leader has to be trained in such a manner that he can deliver on both fronts – build the capability to fight and, at the same time, do it at minimum cost. Here ‘cost’ would apply as in the principle of war, “economy of effort” —wherein human attrition has to be kept to the minimum while preparing

1. Air Cmde Jasjit Singh, ed., *Military Leadership for Tomorrow* (New Delhi: Knowledge World, 2009), p.ix.

**Training is an imperative to impart knowledge, and, therefore, it has to be done rightly. Ineffective training just passes on information with no objective end-use.**

for, and waging, war. Significantly, this aspect of the economy has not found greater resonance with authors who have contributed to this work.

A vacuum exists currently in the military leadership training in terms of imparting knowledge on resource efficiency. Security is still understood as safeguarding borders while concepts of human security are new to the young breed of military leaders in India. Knowledge is an important ingredient of leadership. The knowledge that is being imparted to future military leaders would

allow them to instil similar values amongst their followers so as to mould the organisational behaviour pattern. Every contemporary military leader speaks about the subject of enhancing cost consciousness and respect for resources amongst the personnel placed below him. Due to lack of a coherent training programme on imparting knowledge on the subject, the leaders are presently not equipped to produce innovative solutions and approaches, when in a position to make interventions at various levels of the organisation. The efficiency programmes initiated by them are implemented in a stereotyped manner like running “save electricity” and “save fuel” programmes. Even the systemic changes which are brought about by a few military commanders on this front, end up strait-jacketing the system and lowering the overall quality of the output. Out of the box thinking on building resource-efficiency is difficult to come by as the present military training programme does not stress on this aspect during the formative years of the leader in the organisation, thus, not giving it the priority it deserves.

## **ESSENTIALS OF TRAINING METHODOLOGY**

Training is an imperative to impart knowledge, and, therefore, it has to be done rightly. Ineffective training just passes on information with no objective end-use. Knowledge may be imparted by the processes of formal and informal learning, using different training methods. The terms formal and informal learning have nothing to do with the actual process of learning,

but are rather to do with the objectives and goals of the envisaged learning and the organisational structure that determines who gets to set these goals. In a formal learning environment, the training or education department sets the objectives; while informal learning implies that the learners themselves set their goals.

Training or dissemination of knowledge in the corporate sector is essentially carried out by a variety of methods. The training methodologies can be divided into three groups broadly, as shown below:

- Presentation method.
- Hands-on method.
- Group-building method.

The presentation method, to all intents and purposes, implies the method in which the trainees are merely passive recipients of information. The information includes facts and processes that are passed onto the trainees through lectures facilitated by audio-visual techniques, which have become an integral part of this method in the present times. The presentation may be given by a standard trainer, a guest speaker, a student presentation or even by a panel of specialists. By the use of this method, a large amount of information is presented in an organised manner, in the least time-consuming manner, and to a large group of trainees.

The hands-on method, on the other hand, requires the trainees to be actively involved in the learning process. There are various ways in which this method can be implemented. Mostly On-the-Job Training (OJT), use of simulators, and actual game play are techniques employed as part of the hands-on method approach. This methodology is considered a pivotal ingredient of training on physical processes that require a higher degree of the skill set. Apprenticeship programmes constitute a significant part of the overall hands-on training method. The trainer evaluates the learning process at every instance and even modifies the process as per the needs of the trainee. OJT is useful for *ab-initio* trainees or even when the skill set is sought to be enhanced by cross-training or while introducing new equipment/technology.

The group-building training method may be used when a trainee has already undergone the basic organisational orientation programme. It seeks to improve the trainee's personal skills as well as team work. It involves sharing experiences, building a coherent group structure even while understanding the underpinning interpersonal dynamics, thus, learning to evaluate the individual strengths and weaknesses. This allows the trainee to understand the rationale for allocation of responsibilities and work within a team. This method often involves learning by experimentation. It includes learning through team activities in unfamiliar, mostly outdoor, surroundings. It teaches conflict management and risk-factoring to the trainee.

### **ESSENTIALS OF TRAINING**

Training methodologies are means to impart knowledge. To select one method over another, an appreciation of what constitutes an ideal training module is critical. While choosing a training methodology, the decision is weighed against the type of learning outcome that is being aimed for. The means adopted are dependent on the stage in the organisation at which the likely recipient of the knowledge is positioned. This is also contingent on the efficacy of the method in facilitating learning and transfer of knowledge. The training and development costs have to be evaluated so that they do not outweigh the benefits accrued from the process. Finally, the training has to be proven effective for it to sustain.

Application, end use, and conversion of knowledge into wisdom are ingredients of rightful training. Imparting knowledge for the sake of increasing the information base of the leader may be resorted to at senior positions but the same, if done for a relatively new entrant to the organisation may prove counter-productive. Thus, application and end-use are two of the most fundamental desired outcomes of any training programme. To guarantee these outcomes, a tiered and modular training schedule is implemented generally. The methodology of training and the knowledge contents of the module vary for different levels of trainees as well as for different job contents. Therefore, the training methodology for an

*ab-initio* pilot would be more of hands-on training and for an administrative officer within the Indian Air Force (IAF), the focus would be more on the presentation methodology. Similarly, the case study-based and role-play training methodology may be followed for a mid-level military commander but rarely for a junior level one. By now it must be clear that drawing up a training programme consists of (a) deciding the right training methodology; (b) designing the course contents; (c) the time required to be devoted for the learning imperative; (d) cost-benefit analysis; and, very importantly (e) the choice of the trainer to undertake the task. All these aspects would be covered while suggesting an effective training programme on the environment for the military, with the focus on the IAF.

### **TRAINING IN THE IAF**

Before planning an intervention in an existing system, the rationale for its existence should be well understood. The IAF training curriculum is well thought out and has undergone many modifications as per the changing requirements of the organisation and for the optimisation of human resources, the trainees at different levels. At present, the officers' training in the IAF is divided into three distinct modules to suit the positional needs of its leaders. Positional need implies the learning objectives commensurate to the hierarchical position of the officer at the time of training. The course contents and the training format are so designed that they can be gainfully employed for professional competence and enhancing leadership projection by the officer. The focus is more on professional military and operational contents for obvious reasons and its knowledge base is sought to be augmented in the formative years of a military leader. The modular structure of the present leadership development training in the IAF is shown in a tabular form below (Table 1). Some modules of training are common to the three Services.

**Table 1**

<b>Organisational Position of the Officer</b>	<b>Training Courses</b>	<b>Course Focus Area</b>	<b>Training Methodology</b>
<i>Ab-initio</i> Cadets/ Junior Officers	At <i>ab-initio</i> training academies and other training institutes.	Introduction to Services training and development of professional knowledge.	Formal learning imparted essentially through presentation methods.
Mid-level Commanders	Air Staff course at Defence Services Staff College (DSSC), professional courses at specialist Services training centres.	Developing communication and professional competence, organisational values, staff work skills and working in a joint Services environment.	Formal and informal learning, imparted through presentation methods, game play and group building training methodology.
Mid to Senior Level Commanders	Higher defence management and command training aimed at strategic levels of decision-making.	To develop strategic thinking. Prepare for holding senior command positions. Enhance jointness. Develop military-civil interactions.	Presentation methods in parts. Game play and group building methodology. Through informal learning environment in most parts.

The training system in the Services is devised in such a manner that the requisite expertise and knowledge are available to a budding leader at the right time of his/her career. The knowledge is reinforced through retraining at suitable periods depending upon the expediency of the Services. As far as the training pattern is concerned, it is modular. Even though the pattern is being modified as per the changing needs of the organisation, change in the course contents is a very laborious and centralised process. The professional contents are easily modified as compared to the generalised contents of

training courses. This is due to the fact that the defence forces remain largely insulated from the socially pivotal issues of governance, mostly by design. Therefore, modification of the generalised contents remains a problem area, especially as domain knowledge on the subject is hard to come by in the normal course of events within the military.

During interaction with the training staff at Air Headquarters (HQ) in July 2011, it came to light that the IAF has recently introduced the subject of Right To Information (RTI) in the course contents for *ab-initio* officers as it was felt that they need to be suitably aware of their responsibility towards such an important social issue of the present times. RTI is a subject not directly related to national security but if the leadership is not suitably oriented towards it, the consequences can be irksome and the organisation may be put in an embarrassing situation. Such changes are the need of the hour as the operating environment of the military is changing very fast wherein its personnel are repeatedly faced with social dilemmas in the normal discharge of their duties. A few examples of such interactions are: during aid to civilians at the time of disaster management operations, top leaders facing the media at public forums and when they are confronted with the country's obligation towards issues not directly related to national security. An example of the latter is India's obligation under the Montreal Protocol to phase-out Ozone Depleting Substances (ODS), some of which are also used extensively in the military. Thus, the military's operations have to be managed even when these substances would not be available to them in the future. The present leadership within the military is still grappling with these issues while the budding leaders are not being trained to take decisions on such subjects.

### **KNOWLEDGE ON ENVIRONMENT**

Military leadership needs to evolve with the changing times. This message is loud and clear from what has been stated above. Knowledge of the environment is an indispensable part of the military's preparedness. However, the 'environment' was perceived in more militaristic terms until now to incorporate the direct security connotations of various

interplays in proximity to the entity – nation/defence forces/defence personnel, etc. It did not include the physical changes taking place in the climatic environment that also had a direct and indirect bearing on the security matrix of the nation<sup>2</sup>. The cause and effect of climate change on the military has been well-documented. As mentioned above, a few effects are already being felt by us in the form of having to deal with the consequences of the national commitment to mitigation. A few others like control of Green House Gases (GHG) emissions would be faced by the nation in the near future; by extension, the military establishment cannot remain aloof from the measures that would be enacted by the government on this front.

To develop an environment leader, it would be necessary to arm him/her with broad knowledge on the subject, as shown below.

### **Module 1: Civic Issues**

- Our Ecosystem.
  - Green House Effect (GHE).
  - Ozone Layer Depletion.
- Impact of Different Activities on our Environment
  - Civil Life: Carbon Footprints.
  - Military Activities: Carbon 'Bootprints' and Management of ODS.

### **Module 2**

- International Environmental Agreements.
  - Kyoto Protocol and its Future.
  - Montreal Protocol: Success Story.
- National Legislation and Climate Change Mitigation Action Plans.
  - Central Government Action Plans: National Action Plan(s).
  - State Government Action Plans.

---

2. Manoj Kumar, *Environment Change and National Security* (New Delhi: Knowledge World 2011), Ch 1.

### **Module 3: Service Issues**

- Organisational Structure and Orientation on Environmental Issues.
- Environment Change and its Impact on National Security.
- Organisational Policies and Programmes on Environment.

### **Module 4**

- GHE: Mitigation and Adaptation Techniques: Future Roadmap.
  - Good Practices.
  - Green Military.
- Tools and Techniques for Assessment of Practices
  - Environmental Audits.
  - Involvement of the Cadre.

The training modules are centred on civic and Service issues pertaining to the environment. It is necessary that a foundation is laid down before the thought process develops towards seeking solutions on environmental issues. The overarching nature of the subject of environment lends itself to diverse fields where its application can be made and the cause and effect studied. It would obviously not be possible to cover the entire gamut of operations within the military where the good environmental practices can be applied. It would, thus, be necessary to lay down the framework of training on the subject. Sufficient space has to be given for the budding leaders to come up with their own solutions; care needs to be exercised so that the subject is not covered in such a manner that it supersedes operational efficiency or requirements and leads to a decrease in morale. This is akin to how the environmental issues are being dealt with currently in our country—almost a throwback to the licence ‘raj’ of yore. The basics of the subject should, thus, be covered, leaving the solutions to be brainstormed by the individual leader, depending upon the situation at hand. This brings us to the question of the position/level in which knowledge with regard to the modules given above should be imparted. The next section would throw light on this issue.

## SUGGESTED TRAINING CAPSULES

The training pattern at various levels in the IAF has been covered in Table 1. Based on the training needs at different levels of the organisation, it has to be decided as to what modules, objectives, training methodology and actual course contents should be adopted at various levels of hierarchy. The course contents have to be decided keeping in mind the knowledge need, absorbing capability of mind, inquisitiveness, familiarity with the organisational ethos and, most importantly, the cost-benefit derived by the organisation while covering the subject at a particular seniority of the trainee.

Keeping the above factors in mind, it is felt that Modules 1, 2 and 3, that cover aspects of governmental responsibility/laws/legislation and the factual condition of their application in the military Services, should be covered during the *ab-initio* orientation training of the young leader. Once the rudiments of the subject have been covered at that stage, these subjects need to be revisited during retraining of the mid-level commanders. At that stage, Module 4 should also be covered in which the concept of 'green military' can be introduced. This is the time when knowledge on good practices of environment management being followed by the respective military organisations as well as other such organisations around the globe may be imparted. Involving the mid-level officers in role play as well as out of the box thinking on the subject can be encouraged for generating more solutions and developing independent thinking on such a critical social issue. The process of audit of various activities directed towards the application of environmental policies in the military would also find a place in this module. Improvements that may be accrued by the organisation once the lessons learnt during these audits are applied should be integrated in the course contents of Module 4. A major thrust area of the module would be participative training that would engage the officers in suggesting ways and means to involve the cadre in green forays.

Once a decision is taken on introducing different modules at a particular level of the organisation, suitable course contents need to be designed. It should be kept in mind that the field of environmental research and geopolitics surrounding it is in a transient phase, and witness to large variations

taking place in a short duration. It would, therefore, be prudent to devise a course structure that may be modified in real-time as these changes are taking place. A suggested pattern of course contents for these modules is broadly described below.

### **Module 1**

- Constitution of the Ecosystem.
  - Flora and fauna.
  - Essentials of life on earth – clean air, water and temperature,
  - Green House Effect (GHE).
    - Green House Gases (GHG).
    - Harmony of nature to maintain equilibrium for sustaining life on earth.
  - Presence of Ozone Layer in Stratosphere.
    - Protection of life on earth from Ultra Violet (UV) rays
    - Chemistry behind formation and destruction of ozone layer.
  - History of environmentalism: from ancient India to present times.
- Impact of Anthropogenic Actions on the Environment
  - Industrialisation: Carbon emissions and their impact on the increasing GHE carbon footprints of various sectors Different approaches.
- Scientific Debate on Climate Change.
  - Role of Intergovernmental Panel on Climate Change (IPCC): The controversy and after.
  - Global Warming: Effect on exacerbation of class differences, sea level rise, water and food scarcity and effect on national security.
    - Human security in the ambit of national security.
    - Recognition of the problem by the global community: History of the debate.
    - Role of the military in enhancing carbon 'bootprints'
      - Resource consumption at what costs?
  - Use of Ozone Depleting Substances (ODS) by humans.
    - Refrigeration – CFC, HCFC, HFCs.
    - Fire Suppressants – Halons.

- Solvents – Carbon Tetrachloride, etc.
- Use of ODS in the military. Contribution towards destruction of the ozone layer. Lack of knowledge and communication gap.

## Module 2

- International Efforts to Counter Environmental Degradation.
  - Kyoto Protocol: Common but Differentiated Responsibility: Background: United Nations Framework Convention on Climate Change (UNFCCC)
    - Control of a few GHGs.
    - Commitment of the developed countries: Failure of the protocol: US' inaction.
    - Bali Action Plan.
    - Group dynamics within the parties to the protocol: Developed, developing and small island nation states.
    - Fractured debate on the subject: Copenhagen and beyond: India's stand: Economic impact of Kyoto Protocol on the developed and developing countries: Perspective during global economic slowdown.
    - A brief on financial instruments under the Kyoto Protocol: Clean Development Mechanism (CDM) and its impact on India and China.
    - Adaptation needs: Funding mechanism under discussions at the international forum.
    - Sustainable development: Distant dream in the absence of breakthrough in renewable energy technologies.
      - Types of renewable energy sources in India.
  - Montreal Protocol: Need for the international agreement: An industry perspective.
    - India's commitment: Historical and present situations, National Ozone Units (NOU); Funding mechanism.
    - Situation in civil sector: Availability of halons.

- Phase out of HCFC: Defence forces preparedness.
- Impact on defence forces: Maintenance of legacy equipment.
- Search for alternatives: Paradigm shift.
- Readiness of alternatives with the industry: Reason for success.
- Interconnection between global warming and ozone depletion and vice versa.
- HFC inclusion in Montreal Protocol or Kyoto Protocol?: Current debate.
- Climate Change Mitigation Action Plans.
  - National communication to UN.
  - Environmental governance in India.
  - Migration: Concept of 'Climate Refugees' – Internal and human security issues.
  - Food and water security: Effect of global warming – sea level rise, rise in frequency of sudden climatic events: IPCC's latest report on the subject: India's take on scientific evidence on linkages of sudden events with global warming.
    - Uncertainty of timelines: Analysis of reasons for international 'complacency' on mitigation.
    - Challenge of managing agriculture with unpredictable weather patterns.
  - National Action Plans: Eight Action Plans for climate change mitigation: Present status
    - India's energy needs.
    - Implications for different states.
    - Role of Ministry of New and Renewable Energy (MNRE).
  - State Government Action Plans for Climate Change Mitigation: This subject may be covered only for one odd state such as Gujarat or Tamil Nadu as an example to inform about the role that states play in the entire gamut of policy implementation on climate change mitigation.
  - Monitoring agencies and criterion for implementation of action plans at different levels.

- Role of judiciary.
- What is Environmental Impact Assessment (EIA)?
- Adaptation as a part of Action Plans. Need for adaptation in the Indian context. Funding as an impediment to adaptation strategy in developing countries.

The two modules described above deal completely with the social facet of environment management. This is the foundation of knowledge that needs to be laid first for a military officer. This foundation would assist him/her to draw a bridge between the policies being implemented in the civil sector vis-à-vis that being done in the military. There are lessons to be learnt by both sides. Most of the civil sector, being predominantly involved with social commitments, has well-drafted policies on climate change adaptation and environmental resilience. On the other hand, the military has fewer policies and directives on the subject at this juncture but their implementation, as is expected, assumes top priority and is carried out with military discipline and precision. Thus, only after understanding the national commitments on the subject and the international environmental focus, can a leader fully appreciate the canvas of activities involved while dealing with the subject. Extrapolating these activities for the military would be a leadership act that would require out-of-the-box thinking until training on the social system within the military matures. Only after the broad issues concerned with the environment are covered can the knowledge on their application and implications for the military be imparted. At that point in time, it would be crucial to inform the trainees on how the organisation perceives the issue and is geared to confront it. Imparting a realistic picture is critical. Only then, the progress made on both mitigation of, and adaptation to, climate change by the military, can be appreciated, thereby preparing itself to understand what is still left to be achieved.

### **Module 3**

- Military and Environment.
  - Orientation of the organisation: Understanding of the environment issue amongst the military leaders – Need and application.

- Resource efficiency as the natural by-product of respect for the environment – actual case studies from the organisation.
- Management of ODS in the military.
  - Usage in maintenance and administrative infrastructure.
  - Halon banking.
  - ODS inventory management.
- Diplomatic initiative of showcasing organisational commitment towards a sensitive and contemporary social issue of environmental protection.
- Organisation chart of environment nodal points at all levels of the organisation. The level of interaction with other nodal agencies of the government dealing with the issue.
  - Responsibilities associated with each nodal point.
  - Training requirement for filling up specific environment-related appointments.
- Environment Change and National Security.
  - Effects of global warming viz sea level rise, melting of polar ice caps, water scarcity in the 'third pole' (Tibet), food shortage, vector diseases and international pressures on reduction of energy consumption. All these would cause:
    - Climate-linked migration leading to pressures on effective governance due to enhanced class and economic disparities. Enhanced poverty levels result in internal disturbance with the poor being used as fodder for vested interests.
    - Exacerbation of international fault-lines due to paucity of water. India-Pakistan Indus Water Treaty would be under pressure once the tributaries start drying up. Water-sharing is already a major issue between India and Bangladesh.
    - Opening of sea lanes due to polar ice melting. Impact on international trade and geo-politics. Security of channels of communication. Span of operations.
    - Impact on military medical services as vector-borne diseases become rampant and in new areas. Research and interaction

- with civil counterparts to understand the impact on one's own troops at deployed locations.
- Unpredictable weather patterns would add another paradigm in operational planning and training.
  - International pressure is mounting on stepping up mitigation efforts by high trajectory economies like India. It is a matter of time when this is bound to culminate in increased pressure on military installations to be more energy-efficient. Preparation for energy efficiency in a systemic manner without strait-jacketing the operations.
- Organisation's Environmental Policies.
    - Instructions to aircraft Base Repair Depots (BRDs) on management of halons used for filling aircraft fire extinguishing bottles.
    - Monitoring of fuel consumption on quarterly basis (more for budgetary purposes).
    - Waste Management.
      - Instructions for managing e-wastes.
      - Management of domestic wastes for furthering flight safety measures.
      - Instructions for managing industrial wastes generated in BRDs; not at the same level in operational formations.
    - Participative training on deciding the future roadmap: This should be the last part of this module. Beyond these relevant aspects, the trainees may be asked to submit an assignment on how, according to them, environmental mitigation could be enhanced within the military. Coherent ideas may be suitably rewarded and forwarded for follow-up akin to the flight safety model.

The course contents for Modules 1, 2 and 3 have been designed keeping in mind the requirements for an *ab-initio* trainee as well as for retraining of mid-level officers. The depth of the training curriculum may be suitably reduced depending upon the allotted duration of training and whether it is being used

as the syllabus for retraining or for the initial training programme. However, removing any particular subject may prove to be counter-productive; so that may be avoided. Normally, these three modules should be covered in a linear manner, following the presentation method. Improvisation in the third module to include case studies and encouragement for independent thinking should be given due emphasis. This could be given more focus in the retraining phase but it is also required to be adequately covered during the initial training of the military officers.

After completing the first three modules, a military officer may be considered to be trained on environmental matters so as to take independent decisions on these issues while working in any operational environment. However, policy drafting on any matter requires a different skill set. It is imperative that a conceptual level and strategic thought process is undertaken before long-term policies are drafted. This brings us to the next module (Module 4) which is aimed at developing such thought processes at the senior level hierarchy. It is meant to prepare them for indulging in some creative thinking and implementing wide-ranging reforms within the organisation for mitigation of, and adaptation to, climate change. They would also be ambassadors of these policies and would be expected to coordinate these policies with other organs of the government. The course content for this module is described below.

#### **Module 4**

- Good Environmental Practices in the Military: Transcending the mindset.
  - Requirement of overarching policy: The Indian Army in the lead.<sup>3</sup>
    - Ministry of Defence does not have a policy on the environment.
    - Indian policy-makers still do not include human security under the umbrella of national security.
  - Concept of Green Military: Peace-time initiative.

---

3. For more details, the Indian Army website may be referred <http://indianarmy.nic.in/Site/FromTemplate/frnTempSimple.spx?MnId=Mn7z5DsNgvU=&ParentID=W4Xw5DL5GkM=> accessed on July 15, 2011.

- Top down approach for formation level policy on the environment preservation is a must.
- Green buildings: Military Engineering Services working towards it: More requires to be done.
- Direct actions like planting trees and disposal of municipal waste are priority areas.
- Capacity building of future environmental leaders.
- Showcasing social commitments undertaken by the military.
- Training commitments should be made greener without impact on operational efficiency.
- Adaptation to climate change or consequent national action plans requires future organisational policies to be made keeping in mind its adverse impacts.
  - Adaptation not yet a priority.
- Executing Good Environmental Policies.
  - Need for environmental audits to check the efficacy of policies
    - Training of auditors.
    - Rationale behind setting up benchmarks on the basis of which the audits have to be conducted.
    - Environmental audit process: Use of existing audit agencies
    - Results of audit: Reorientation of policies based on findings of the audit. The level of hierarchy that carries out the reorientation.
- Capacity building of cadre
  - Permeation of safe environment culture within
    - Knowledge empowerment as a means of furthering the reach of good environmental practices.
      - Information on ODS: Need for its management in the organisation.
      - Information of good practices being followed.
      - Information on environment organisational structure.
      - Waste disposal: Domestic and industrial.
    - Importance of rank and file to get involved with resource efficiency

- ❑ Importance of resource efficiency as a part of good environmental practices.
- ❑ Difference that their efforts can make in saving costs involved in operations.
- ❑ Case study-based teaching on resource efficiency in the respective organisation.

At present, there is no training on the subject for the lower seniority personnel within the military. This is likely to decrease the efficacy of implementation of policies, especially if all personnel are not on board with respect to the larger operational and social gains that are likely to be accumulated by implementing these policies. With the advent of the information age, the personnel can be easily motivated once their role in achieving the desired environmental objective is explained to them. This should be the focus of any training that is conducted for the workforce. Informal training methodology should be followed initially for conveying the message of building resource efficiency, leading to safeguarding of the environment. The target audience for such training would be mid-level non-commissioned ranks of the military. The message would be conveyed forcefully with the use of actual case studies that highlight how these policies would stand the organisation in good stead – operationally and to build a positive image.

### **EVALUATION OF TRAINING**

Once a training schedule and its course contents have been worked out and implemented, it would be equally important to evaluate its impact and efficacy. Since continual improvement is a desired feature of any quality system, a feedback mechanism has to be inbuilt in the system loop, to enable advancements and optimisation. Normally, this evaluation of training is carried out in the Services in the form of a questionnaire that is given to each trainee after the programme and they need to give their quantitative or qualitative feedback on each aspect of the training in response – from the trainers to the course content, from the duration of the programme to

adequacy of focus on each area. Their views are also sought on any other subject that they would like to have covered in the training. After the trainees go (back) to the operational formations, the adequacy of their training level is sought from their superior officers. This also acts as a valuable tool in the hands of the training programme planners.

With regard to training on environmental matters, it would be practical to focus on feedback from the trainees as a group and as individuals. Feedback from superiors in the operational formations may not really work at this juncture, primarily due to the limited exposure of these officers to environmental issues. More than the established feedback pattern being followed at the moment, it would be better to see the recall value of the course contents and their application. One way that this could be done is to ask the officers (junior to mid-level) to write a paper on the subject within six months of reaching their units. The paper should be dedicated to practical solutions to environmental problems that are being encountered or observed within their formation. Some of these papers should be selected based on criteria such as the depth of the problem perceived, the practicality and innovativeness of the solution found and the overarching nature of the issue(s) discussed. These papers should then be brainstormed in the next course without revealing the formation's name. It would provide a good learning experience to the young leaders and prepare them to do some innovative thinking of their own. Some incentive may be provided to the best solution provider as a motivation. The type of solutions suggested would also provide feedback to the trainers on what actually has been assimilated by the trainees from the course. Improvements in the course contents as well as the knowledge imparting methodology should take into account the papers written by the former trainees as well as the ideas being generated through brainstorming on those papers. This may be treated as an immediate response and be covered in Module 3 as part of the case study. The environmental audit of a formation can also be used to examine the assimilation patterns of the trainees that have undertaken such training. Here it would be better to study the pattern rather than

individual progress. The idea is not to encourage learning by rote in this field but to encourage deeper thinking of the issue.

#### IMPORTANCE OF RIGHT MIX IN TRAINING

Military training has to focus on inculcating war-fighting abilities in the trainees. There is no denying that this should receive the highest priority. Growth of a leader in the military starts right from his/ her selection procedure where such traits are assessed. The leader is then imparted adequate military and organisational knowledge through various training means to become a complete leader for steering the organisation. However, till recently, the training process did not include many issues related to interaction with the civil society even if they affected the working of the military organisations. This process is now being forced to change due to the growing needs of the hour. There is a great need for the training to be made inclusive of contemporary societal issues like RTI, environment stipulations and media management at the *ab-initio* and mid-seniority level. Total growth of an officer can be ensured only by making the training all inclusive.

The evolution of an organisation can come about only if it invests in its future leaders. The starting point for the process is the change in the training pattern of its leaders. What has been attempted here is to suggest how the training mix can be suitably modified, to contemporise the knowledge base so as to assist in making a true leader. Only one subject of this additional mix has been suggested here: national and international environmental issues. There are a few other social issues, as mentioned in the previous paragraph, that may be included in the overall training curriculum of a military officer to make it more balanced. This is the need of the hour as there are many instances wherein the military commander finds himself short on the necessary expertise and skill set when faced with social issues that are cropping up with increasing regularity. This suggested training addition would not only result in making an environmental leader of the future but also make the military extract more 'value' while optimising 'effort'.



# POLITICAL ISLAM, DEMOCRACY AND ARAB SPRING

M. R. KHAN

The reasons as to why none of the 56 odd Muslim majority countries is a Western style, liberal pluralist democracy has been the subject of debate among the orientalist, social scientists and political analysts of all hues. Although opinions greatly vary, the general Western impression is that Islam in its purest form, in some manner, is inimical to democracy and development of civil society. The subject has generated great interest because a number of secessionist and radical movements the world over owe allegiance to political Islam and the central theme of all these movements is a call for Islamic governance based on the laws of the *Sharia*. This has also created an impression in unfamiliar quarters that there is some kind of a monolithic political structure recommended in Islamic texts, that, though antithetical to a liberal democracy, could, nevertheless, be applied to a modern state and, hence, may have global implications. The feeling, in the wake of so-called “Arab Spring” or Jasmine Revolution underway in a number of North African and West Asian states at the time of writing, which are basically mass movements aimed at overthrowing the long reigning tyrannical sultanistic regimes, has resulted in great anxiety in the international community regarding the future of these states.

---

Commodore M. R. Khan is a Senior Fellow at the Centre for Air Power Studies, New Delhi.

The aim of this paper, therefore, is to explore various strands of thought in the historical and contemporary context on political structures compatible with the Islamic religion and culture, focus on Islamist notions of democracy, and attempt a prognosis. The subject is important because the signs of Islamic revival are evident in the personal and public life of virtually every Muslim country. A sizeable population of these countries seems convinced that political Islam is a viable alternative to Western origin systems like capitalism, socialism and secular nationalism, which have failed them. Political parties grounded in political Islam have a strong presence in these countries. The future political developments in some of these states in our neighbourhood/extended neighbourhood are also of vital interest to us as they are likely to have implications for our overall security.

#### **HISTORICAL BACKGROUND**

Since the political structure of a presumed "Islamic State" accrues from the religion, let us briefly go over the origin of the religion and its fundamental principles. As is well known, Islam is a religion of Semitic origin and closely related to Judaism and Christianity. The Prophet of Islam did not claim to start a new religion at all. He was only the last Prophet in a chain of Prophets starting with Adam. His task was to restore the religion of God, which had become corrupted over the centuries, to its pristine purity. Its fundamental principles were belief in the one, all powerful, cosmic and transcendental God, the Prophethood of Mohammed and a very strong moral code, with great stress on the creation of a moralistic, egalitarian and just society bound together by a common faith.

Naturally, the religion's original appeal was enormous, particularly for the downtrodden of Arabia. Equally strong was opposition from the aristocracy and the privileged strata of society in Mecca, the place of the Prophet's birth. Since armed conflict was inevitable, great stress has been placed on the virtues of physical courage and valour, and martyrdom is considered the ultimate sacrifice in the path of virtue and to uphold the truth. It is not only to be welcomed in an armed conflict in the path of God but is to be actively sought and is glorified as the eternal life and path to

salvation in after life. Islam, like Christianity, is also an evangelical religion. The 'Message' has to be carried and missionary work to be given the highest priority. Virtuous and clean living is the best way to preach. The source of all religious and social mores is the book *al-Quran*, which is the word of God as revealed to the Prophet. What is specifically not provided in the *Quran* should be inferred from the *Sunnah* or the tradition of the Prophet.

The difficulty is that not much is mentioned in the *Quran* or the *Hadith* (sayings of the Prophet) about the political organisation or the system of government. The emphasis is on lifting the individual to a level of morality where the outcome can only be a just and tranquil society and acceptable political organisation. Implicit in principle is collective leadership of the pious and the wise. The supreme leader, who may be elected by the most pious and God fearing of the community, is to be implicitly obeyed, as long as he does not deviate from the path of virtue.

Hereditary kingship is scoffed at but not specifically forbidden. Economic principles are simple. Exploitation and profiteering are sinful. Interest is completely forbidden and one of the greatest sins, second only to apostasy and blasphemy. Honest earning is a must for salvation. A strong brotherhood, based on religion, is prescribed, irrespective of caste, creed, race and the colour of the skin. This has been emphasised time and again, including in the last sermon of the Prophet. The severest punishments are prescribed for social offences. There is emphasis on some rituals such as praying five times a day, fasting in the month of *Ramadan* and giving of alms. To sum up, the religion is simple, direct, and highly codified, with belief in monotheism, the Prophethood of Mohammed, with after life being its nucleus.

Muslims all over the world believe that a near utopian society, based on the aforementioned principles, existed when the Prophet himself reigned at Medina and during the period of the first four Caliphs who followed him. This period works out to roughly 40 years and is also popularly referred as the "Medina Model". The Prophet himself, as well as the first four Caliphs called *Rashidoun* or the rightly guided, ruled from the mosque and lived in the simplest possible manner, with no trappings of power whatsoever. In fact, the chronicles tell us that all of them drew such a small amount of

**Although the Islamic civilisation was the dominant civilisation for nearly 700 years, the utopian society lasted for just the 40 years, and some believe for short periods thereafter in short epochs.**

allowance that their families had, sometimes, to do without adequate food and clothing, despite vast lands being conquered and enormous wealth pouring into Medina. Although the Islamic civilisation was the dominant civilisation for nearly 700 years, the utopian society lasted for just 40 years, and, some believe, for short periods thereafter in short epochs.

Despite substantial historical evidence, some find it difficult to believe that such a near utopian model existed, for however short a period it might have been. A perennial nostalgia for the “Medina Model” is at the core of all the Islamist movements as far as the quest for a just and clean political system is concerned. To them, any other regime, irrespective of the political system, appears illegitimate in comparison. On the other hand, rationalists and liberals among Muslims contend that considering the complexity of the modern state and the world order, the Medina Model, which applied to a much smaller and incomparably facile state, cannot be realised in the modern times, though nobody refutes that it was based on sound moral principles. They also point out that while the system could be construed as liberal for its period (1,400 years ago), the world has moved on a lot in terms of minority and human rights and gender equality, etc., therefore the traditional Islamic political system, without incorporating some of the structural changes based on modern principles, is not workable. Nevertheless, the emotional appeal of the Medina Model and its hold on the Muslim psyche is so durable that those outside the faith find it difficult to comprehend. In the current state of Muslim nations, most of which are riddled with authoritarianism, corruption, nepotism, backwardness, injustice, repression and incompetence, this appeal becomes overwhelming. The appeal of political Islam lies in convincing the *ummah* that the only way to come out of this morass of immorality and repression is to return to the faith and the high principles associated with it and the Medina Model of governance. The advocates of political Islam also emphasise that

the materialistic and decadent West cannot advance a political structure compatible with the religious cultural and social values of Islam.

### MODERN POLITICAL THOUGHTS IN ISLAM

The conventional genealogy of modern Islamic thought started with Sayyid Jamaluddin Afghani (1839-97). He was born in Asadabad in Iran and adopted the eponym al-Afghani. His basic call was for the Muslims of the world to unite to confront the European, specially the British imperialism, which he considered to be the greatest threat to Islam.<sup>1</sup> His political career included activity in India, Egypt, Iran and the Ottoman capital of Istanbul. His movement came to be known as the Pan Islamic movement. In Egypt, he had a young associate, Mohammed Abdouh(1849-1905). Together, they spoke out against the foreign political and economic domination of Egypt which culminated in the British invasion and occupation in 1882. Exiled in Paris for their views, they published a Pan Islamic journal *Al-Urwa al Wuthqa* (The Firmest Link). When Abdouh returned to Egypt, he partially made up with the British and with the approval of the British Consul-General, Lord Cromer, eventually became the chief Mufti of Egypt. He occupied himself with reforming the teaching of Arabic and the understanding of Islam. He argued that a proper understanding and implementation of the moral and ethical principles of Islam was compatible with the adoption of modern science and technology. He noted that Muslims were the first to inherit and develop Greek philosophy and science before passing them to the Western Europeans. Abdouh also argued that the early Muslims or the *Salaf*, practised a more pure and correct form of Islam, unsullied by the medieval accretions and superstitions perpetuated by ignorance and unconsidered imitations.

Rashid Reda(1865-1935) who came to Egypt from Tripoli, Lebanon, was Mohammed Abdouh's most influential student. He wrote a biography of his teacher, compiled his writings and publicised a conservative interpretation of Abdouh's doctrine. Using the magazine *Al-Manar* (The Lighthouse) as his mouthpiece, Rida promoted the *Salafia* movement, a neo-traditionalist

---

1. Reza Aslan, *No God but God* (New York: Random House Trade Paperback Edition),p.230.

orientation that restricted what was to be regarded as correct in Islam to the *Quran*, the *Sunnah* (traditions and practices of the Prophet), and the reports of the reign of the first four Caliphs in the Sunni tradition: Abu Bakr, Umar, Uthman and Ali . This by no means was a new movement. The return to pure, unsullied, free of innovations and accretions, simple Islam of the Prophet's time, is a recurring theme in the history of Islamic theology. The first such movement was pioneered by Imam Ahmed bin Hannibal about 150 years after the death of the Prophet. In modern times, a clarion call to return to original Islam is attributed to Mohammed bin Abdul Wahab of Najd in Saudi Arabia, and Shah Waliullah Dehlvi of India in the 18<sup>th</sup> century. Mohammed bin Abdul Wahab was closely associated with the Al Saud family, rulers of the province of Najd who later became rulers of the entire Arabia, including the Hejaz region where the holy cities of Mecca and Medina are located, and named the country after their family.

The *Salafia* movement influenced many *ulema*(Muslim scholars) all over the Sunni Muslim world. The Aligarh education movement of Sir Sayyed Ahmed Khan was partly inspired by it<sup>2</sup>. It was a factor in the formation of the Association of Algerian Ulema in 1931, an Islamist current that was largely absorbed into the National Liberation Front(FLN) and later became a source of inspiration for the Islamist opposition to the Algerian regime in the 1980s. Salafist ideas also influenced the thinking of Izz ad-Din al Qassam, a Muslim cleric in Haifa who organised a shortlived Palestinian guerrilla movement against the Zionists and the British in 1955. The military units of Hamas, the Izz ad Din brigades, are named after him.

Hasan al-Banna(1906-49), an Egyptian school teacher working in Ismailiya, the headquarters of the Suez Canal Company, and a highly Europeanised town, was one of those influenced by Rashid Reda and *Al-Manar*. In 1928, he established the Society of Muslim Brothers (*Jamiyat al-Ikhwān al-Muslimīn*), which was to become the largest and most influential Islamic organisation in the Sunni Muslim world, espousing the cause of political Islam. After emerging as an important factor in the Egyptian politics in the 1930s, the Muslim Brothers established branches in North Africa,

---

2. Asghar Ali Engineer, *Islam and Revolution* (New Delhi: Ajanta Publication, 1998), p.109.

Syria, Palestine, Jordan, and Sudan. The Islamic Tendency Movement was also inspired by the Muslim Brothers. The Muslim Brothers were banned in 1948, as a consequence of the assassination of the Egyptian Prime Minister by a member of the Brothers, despite a forceful condemnation of the act by al-Banna. Al-Banna was himself assassinated in February 1949 by a suspected agent of the King's secret police.

Many of the Islamic movements of the 1970s and 1980s are inspired by the thinking of Sayyid Qutb, a Muslim Brothers leader executed for allegedly planning to overthrow the Egyptian government in 1966. Qutb had argued that the regime of Gamal Abd al-Nasser, since it had tortured and imprisoned pious Muslims and was refusing to implement the *Sharia*, was not an Islamic one at all but a regime akin to pre-Islamic ignorance (*jahiliya*). Hence, it was legitimate to launch a *jihad* against such a regime. Maulana Abul Ala Maududi, the founder of the Jamaat-e-Islami of India, who later migrated to Pakistan in 1948, was also influenced by the extensive writings of Sayyid Qutb on the structure of an Islamic state, a subject close to his own heart.

The Shia tradition, a minority orientation in Islam which regards the Prophet's cousin and son-in-law, Ali, as the first legitimate Caliph and believes that the succession to the leadership of the Muslim community should have devolved and been confined to the Prophet's family, has an entirely different genealogy. It is geographically centred in Iran and southern Iraq where the Shias form the large majority of Muslims. An important political focus of much of Shia thought is the struggle of the *ulema* (*mullah* in Persian) to assert the primacy of their authority against the Qajar and the Pahalavi monarchies of Iran. It is significant to note that the Shia orientation has a well defined clerical hierarchic order whereas the Sunni faith has virtually no officially recognised ecclesiastical dispensation. In the modern period, the most prominent exponent of the Shia tradition of political Islam was the late Grand Ayatollah Khomeini, the leader of the Iranian revolution of 1979. He propounded the idea of *Vilayat-e Faqih*, meaning that an Islamic jurist alone is fit to rule an Islamic state. The political structures and the Constitution of post revolution Iran have been shaped by his ideas of a functioning Islamic state.

**The consensus view of the Islamist authors in the forefront of political Islam is that Islam comprises faith, ethics and law as set forth in the *Quran*.**

### **ISLAMIST VIEWS ON DEMOCRACY AND THE STATE**

A number of authors belonging to the Sunni mainstream Islamist movements have written on the subject. These include the already mentioned Syed Qutb and Abul Ala Maududi, members of the Jordanian and Egyptian Brothers, Rashid al Ghanoushi of the Tunisian Islamist Movement, and the authors committed to the Islamic awakening movement like Muhammed Imara, Muhammed Salim al Awwa, Fahim Huwaydi and others. There is general agreement among these authors that Islam is comprehensive or as a commonly used modern formula has it, that it is a religion...a state (*al-Islam din wa dawla*)<sup>3</sup>. The formulation not only rejects Western notions of secularism but also the version advocated by the Egyptian author Ali Abd Raziq in his book *Islam and the Roots of Government*, published in 1925, shortly after the abolition of the Caliphate in Turkey. His claims that Muhammad was a Prophet and not a statesman, that Islam is a religion and not a state and that the Caliphate from the beginning was based on coercive force, still provoke outrage.

The consensus view of the Islamist authors in the forefront of political Islam is that Islam comprises faith, ethics and law as set forth in the *Quran*, exemplified by the life of Prophet Muhammad and his companions and later developed by the Muslim theologians and jurists (*ulema and fuqaha*) into the *Sharia*. The hallmark of the truly Islamic system (*al-nizam al Islami*) is the application of *Sharia* and not a particular political order—the historical Caliphate included. What matters is the purpose of the state and the principles on which it rests. The principles are to be found in the *Quran* and the *Sunnah*, and they include, most notably, justice (*adl*), mutual consultation (*shura*), equality, freedom and struggle in the path of God (*jihad*). The militants go even further, declaring that any Muslim who does not apply and follow the divine

---

3. Joel Beinin and Joe Stork, ed., *Political Islam: Essays from Middle East Report* (1996), p.68.

law is to be considered, and fought, as a sinner, a tyrant and an infidel (concept of *tekfir*)<sup>4</sup>.

These authors, while denouncing secularism as a creed alien to Islam, agree that a distinction exists between the eternal and the temporal. The distinction is reflected in modern Islamic legal theory which distinguishes between *ibadat*, involving a person's relations with his or her creator (essentially the five pillars of Islam) and *mu'amalat*, covering all other aspects of economic, political and family life. While *ibadat* is eternal and immutable, *mu'amalat* can be adapted to the changing requirements of time and locality, provided the results conform to the spirit of the *Sharia*. What they envisage, then, are the two differentiated spheres of human life and activity: one sphere revolving around the faith and worship, and the other around the worldly affairs, but both subject to the precepts of Islam.<sup>5</sup>

Having established the *Sharia* as the cornerstone of Islamic governance and the government as merely the executor of God's law, the debate shifts to defining the *Sharia*—whether it is a comprehensive set of norms and values regulating human life to the minute details, or a set of general rules of virtuous life and moral behaviour aiming at people's welfare on the earth and their salvation in the afterlife. There is a general consensus that the *Sharia* is comprehensive but, at the same time, flexible enough and, therefore, suited to all times and places. The crucial distinction is between an immutable core (*al- asl*) and the flexible elements (*al-fru*) derived by human reason from the core by following the rules of Islamic jurisprudence

The extent to which the *Sharia* can be modified from its classical interpretation is the main debate between the enlightened modernist reformers and the conservatives like Syed Qutb and Abul Ala Maududi. However, all agree that to apply the *Sharia* requires social organisation and a state. But God, in his wisdom, left the details of political organisation to the Muslim community (*ummah*) to decide according to its needs and aspirations. The government and politics are part of the *mu'amalat* that are to be regulated so as to realise the common good which, if properly

---

4. Ibid., p. 69.

5. Ibid., p. 69.

understood, coincides with the purposes of the *Sharia*. Therefore, Muslims are not prohibited from adopting techniques and modes of organisation of non-Islamic origin provided they are in concurrence with the core values of Islam. Hence, the adoption of democracy or of certain democratic elements may be acceptable or even recommended, provided this does not lead to the neglect or violation of Islamic norms and values.

### SOVEREIGNTY AND AUTHORITY

The fundamental beliefs of Islamic polity are that all humanity is born equal, having been installed as God's viceregent on earth; the government exists to ensure an Islamic life and enforce Islamic law; sovereignty ultimately rests with God alone, who has made the law and defined good and evil, the licit and the illicit; the authority to apply God's law has been transferred to the community as a whole, which is, therefore, the source of all power; and the head of the community or the state, no matter whether he( and they specifically exclude women from that function) be called the Imam, Caliph or President, is the mere representative, agent or employee of the community that elects, supervises and, if necessary, deposes him, either directly or via its representatives<sup>6</sup>.

These modern positions with the centrality of the *Sharia* and the concept of authority resting with the *ummah* or the community mark a definite shift of emphasis away from the person of the ruler and the duty of obedience and acquiescence for the sake of peace and stability, even under unjust rule, as stressed in the medieval writings of Imam al-Ghazali(died1111) and Ibn Taimiya(died1328). This shift is perhaps the result of modern political ideas and general political awakening among the Muslim masses. It is also in consonance with the widespread resentment against arbitrary and peremptory personal rule and the desire to replace it with the rule of divine law. The argument in favour of God's sole sovereignty or *hakimiyya* is that humans with their limited intelligence and strong passions are incapable of framing just and egalitarian laws. Islamists contend that all people are created equal and, therefore, no one has the right to impose his or her often

---

6. Asghar Ali Engineer, *The Islamic State* (New Delhi: Vikas Publishing House, 1998), p. 86.

subjective will on others, and given that humans are too weak to control their passions and desires, a higher authority is needed to keep them in check. This higher authority could only be the divine law, binding on all, the high and low, rich and poor.<sup>7</sup>

The assertion of God's sovereignty can only be achieved through strict and exclusive application of the *Sharia* and that would not only signify genuine rule of law but would also liberate man from the servitude of man. Hence, Islamists insist that Islam is the only ideology of true liberation. And it is in this sense that the writings of Abu Ala Maududi, Syed Qutb, or Taqi al Din Nabhani have influenced a large section of Muslim masses in search of social and economic justice, and disillusioned with corrupt and despotic rulers. But for the critical observer, by contrast, the utopian character and, the very real, authoritarian streak of this line of reasoning, is all too obvious. Because in the ultimate reckoning, it would be only men and women ruled by their passions and subject to the limitations of their understanding, who would interpret and apply God's law.

The role and designation of the ruler in an Islamic state is, to some extent, a contested field among the Islamists. But the underlying concepts are similar. The ruler must be pious and of a high character. He could be directly or indirectly elected but he is only a representative of the people and his main task is to run the state in accordance with the divine law and with justice. He has no religious authority and must consult Islamic scholars in case of doubt about the interpretation of the *Sharia*. Thus, while the state rests on religious foundations, its leadership carries no religious sanction and is accountable to the people as well as God. Some modern Muslim authors have used the term theo-democracy.

## ISLAMIC STATE AND PLURALISM

The most difficult task the Islamists face is defining pluralism in the context of an Islamic state as there is little to draw upon in the classic texts. Some claim that the Medina Model had a fair amount of pluralism built in and cite the text of the Prophet's agreement with the Jews of Medina. But that alone

---

7. Ibid., p. 87.

**The most difficult task the Islamists face is defining pluralism in the context of an Islamic state as there is little to draw upon in the classic texts.**

cannot be the basis for structuring a complex modern pluralistic state. Therefore, they have to inevitably draw from the structures and institutions of a modern Western state. The need for the rules of business or a Constitution and continuous consultation as well as permanent control over the ruler and the government is acknowledged. Most authors also accept the need for the separation of powers in which the executive and the legislature effectively keep each other in check, though they maintain that in an Islamic context, legislation is confined to the implementation of the *Sharia* and its interpretation, if changed circumstances warrant it.<sup>8</sup>

Since the core value of an Islamic state is that the *Sharia* is immutable, except for minor interpretations, Islamists find it extremely difficult to envisage consultation and participation as a genuine political process involving interest representation, competition and contestation. Political parties with ideologies other than Islam are not to be permitted. There is great reluctance to allow for unrestricted freedom of speech and organisations with different opinions. Another controversial issue is of giving representation to non-Muslims. Some liberals among Islamists propose that non-Muslims could be part of the legislature and judiciary dealing with the affairs of non-believers who are to be left to practise their own religion and personal law. The representatives to the legislature are to be elected by a separate electorate consisting of non-Muslims only. Syed Qutb and Abu Ala Maududi allow them only to practise their religion and personal law but do not prescribe any representation. Human rights, as seen from the Islamic perspective, and their observance is a part of duties towards God and, therefore, obligatory. The protection of individual rights and civil liberties from government interference, as well as the elimination of repression and torture figure prominently on the Islamist agenda. But the mainstream attitude remains highly restrictive with regard to freedom of political, religious and artistic expression, if that involves the right to freely

---

8. Ibid., p. 94.

express one's religious feelings and doubts. Change of religion by a Muslim is considered a grave offence and not permitted. Similarly, the attitude to gender issues is deeply conservative and based on the premise that God has prescribed different roles for the sexes and they are not interchangeable, though it is acknowledged that both are equally important for the Islamic society and equal in the eyes of God as humans. The bottom line is that pluralism, as known in the West, will be severely restricted in an Islamic state.<sup>9</sup>

### **CURRENT POLITICAL CONDITIONS IN MUSLIM STATES: AN OVERVIEW**

Having explored the various strands of thought on the structure of an Islamic state as put forward by its classical and contemporary exponents, let us take stock of the actual world of Islam and its recent political developments. The actual world of Islam is diverse and complex. There are 32 countries with Muslim populations of 86 percent and above, 9 are in the range of 66 to 85 percent Muslims and another 19 have Muslim populations close to 50 percent or a sizeable minority. Prior to the Arab Spring, most of these states, in the professed form, were democracies and monarchies, but in reality many of the so-called democracies were sultanistic dictatorships.<sup>10</sup> The term denotes governments where a national leader expands his power at the expense of formal institutions. He might maintain democratic props like Parliament, regular elections and political parties, but stands above them and rules by installing his compliant supporters in the key positions and with the support of the armed forces. These dictators as well as monarchs often sought international legitimacy as well as licence for political oppression, especially from the US and Western countries suffering from Islamophobia, on the pretext of keeping fundamentalist Islamic forces in check and were often propped up by generous financial aid from them. Iran under the Shah, Indonesia under Suharto, Iraq under Saddam , as well as Tunis, Egypt, and Yemen where the current Arab revolution (2011)

---

9. Ibid., p. 106.

10. Jack A. Goldstone, "Understanding the Revolutions of 2011," *Foreign Affairs*, May/June 2011, p. 8.

has recently succeeded, were the regimes in this category. At the time of this writing, the outcome of similar regimes in Syria, Libya, and Sudan is still uncertain though major popular protests are going on. The ex-Soviet, Central Asian Republics also qualify as sultanistic dictatorships under their present political dispensation. Conditions in these countries, which include economic deprivation, rampant corruption, unemployment, ethnic and religious discrimination, and political oppression, are also ripe for popular revolt, which might come any time.

Monarchies such as Jordan, Morocco, and the Gulf Kingdoms have absolute monarchs in control who have considerable executive powers but have ceded some cosmetic legislative powers to either the nominated or elected representatives. Though not popular, these regimes have better chances of survival because of the flexible attitude of the rulers and in the case of the Gulf Kingdoms, their ability to bribe virtually every citizen, since these states have high oil incomes and small populations. The only major functioning democracies in the Muslim world are Pakistan, Bangladesh, Indonesia Malaysia, Turkey and, to some extent, Iran. The Freedom House Organisation in its 2010 report rated only one Muslim country as genuinely free (Indonesia), a few are listed as partially free, and all others as not free. Seven of them find a place in a list of eleven most repressive regimes in the world.

### **THE ARAB SPRING**

In December of 2010, when the police forcibly removed the unauthorised vegetable stall of Bou Azize in the central town of Side Bouzid in Tunisia, it appeared a routine matter. But Bou Azize, an unemployed graduate resisted stubbornly and was reportedly slapped by a lady police officer. Bou Azize, unable to bear the insult, as well as the loss of livelihood, killed himself by self-immolating, and set in motion an Arab uprising the like of which has not been seen in the recent Arab history. The surprise is not that a minor incident like this set in motion a revolutionary movement of such dimensions, but that it was so long in coming.

Most of these countries have long been victims of political repression. Many of them are plagued by social stagnation, widespread corruption

at all levels, low economic growth, high levels of youth unemployment and unequal distribution of wealth. Decades of autocratic rule and lack of democratic norms in governance had created a volcano of popular dissent waiting to explode. Presidents, once elected, refuse to go, rig successive elections, and continue to rule for decades with the help of their armed forces, or specially created armed units and the secret police, collectively known as *Mokhberat*. The main US and Western interests in the region are access to oil, its availability at a price advantageous to the developed nations, and the security of their close ally, Israel. In recent years, two more have been added: non-proliferation of Weapons of Mass Destruction (WMDs), and the war on terror. If a ruler supported these interests, he had the backing of the US and its North Atlantic Alliance. His repressive measures and kleptocratic conduct were condoned on the pretext of stability.

In the post 9/11 period, many of these rulers branded genuine political dissent as extremist Islamic movements supporting terrorism and had the tacit or overt support of a paranoid US in the large scale repression unleashed by them on opponents in order to remain in power. A media savvy, frustrated, large young population of educated unemployed, a product of the demographic explosion of the last few decades, was only waiting to explode. The trigger was provided by the incident in Tunisia. Egypt followed, and within days the unrest spread to Yemen, Bahrain, Libya, Jordan, and Syria. Even Saudi Arabia did not appear entirely safe, especially with rumblings in the oil rich, Shia dominated restive east. It was only with massive largesse and political concessions that King Abdullah could ward off the trouble for the time being.

### **TRENDS OUT OF ARAB SPRING**

While the leaders in Tunisia and Egypt have fallen, their regimes, dominated by the armed forces, are intact. In Libya, at the time of this writing, Gaddafi is gone but the situation is far from clear. Bashar al Assad's position in Syria is precarious but he is hanging on and the army is still loyal to him. In Yemen, though Abdullah Saleh has been absent for months, his relatives and cronies, with the help of the armed forces, are in partial control of

**The Arab Spring has virtually spelt the end of Pan Arabism. States such as Egypt, Syria, Iraq, Libya, Algeria, and Tunis, when they came into existence in their present *avatar*, in the 1960s, and 1970s, were vibrant states, dominated by the ideology of Pan Arabism.**

the region around the capital. The opposition is divided and split along tribal lines. Jordan, Morocco, Oman, and Saudi Arabia have tried a combination of concessions, liberalisation, and repression to ward off the trouble for now. The Al Khalifas in Bahrain have managed to brutally suppress the Shia-led revolt with the help of Saudi forces but the outcome remains uncertain.

Another feature of the Arab Spring is that it has virtually spelt the end of Pan Arabism. States such as Egypt, Syria, Iraq, Libya, Algeria, and Tunis when they came into existence in their present *avatar*, in the 1960s, and 1970s,

were vibrant states, dominated by the ideology of Pan Arabism. The Pan Arab ideology was based on linguistic, regional and ethnic identity to the exclusion of religion, and, thus, mainly secular. The ideology has decayed over the years and now it has few takers in these countries.

Though demonstrations and unrest continue, the early political trends in Egypt and Tunisia post revolution are encouraging. These countries had comparatively well established secular political institutions which were subverted by the incumbent Presidents Zainel Abedin bin Ali and Hosseini Mobarek by rigging elections and the elimination of political dissent. These institutions can easily be revived by a well intentioned leadership. The military backed regimes in both countries have scheduled elections towards the end of the year (October-November 2011) and promised to support constitutional changes which elected legislative chambers may like to bring to prevent the subversion of democratic norms in the future. Elections in both the countries were postponed to allow the secular parties sufficient time to get organised against the well entrenched Islamist parties, Muslim Brothers in Egypt and Al Nahda in Tunis. There have been some apprehensions about the military's intentions in Egypt, especially when it refused to allow foreign observers in the forthcoming elections. It is feared

that if the Islamists are poised to win in either country, the military, a strong long time opponent of the Islamists, might intervene. However, Al Nahda is a well known liberal Islamist party and the leadership of Muslim Brothers in Egypt has repeatedly announced that if elected to power, they will refrain from blindly applying the *Sharia* and respect the secular institutions of the country.

The situation in Libya and Yemen is entirely different. The societies in these countries are highly fractured, where tribal loyalties run high and are permanent. National identities are not strong and secular political institutions are either weak or non-existent. The suspected Islamic extremist groups are also a part of the rebel movement. Therefore, the outcome is difficult to predict and balkanisation, instability and short periods of extremism are a distinct possibility. Syria has long been under the quasi fascist Baath Party. Bashar al Assad, and earlier his father Hafiz have ruled the country with an iron fist. The Baathist system of cell-based party structure, wide penetration of the society by the secret police, and the large privileged armed forces have so far ensured durability of the regime. But its time seems to be over. In Syria too, the Muslim Brotherhood has been in the forefront of the rebellion and is likely to play a prominent part in the political developments after Bashar is ousted.

Taking an overview of this Arab awakening, it is evident that while conditions are different in every country of the region, certain broad trends are discernable, and these are towards a democratic polity mixed with Islamism. This is making Islamophobics in the West and liberals in the Muslim world a little jittery because of the belief that once in power, Islamists might hijack the revolution, like it happened in Iran, and try to implement their repressive agenda. But these fears are exaggerated and were the cause of a bloody civil war in Algeria during the Nineties, after the Islamic Salvation Front's election victory was nullified by the army. The times have greatly changed since the Iranian revolution. Moreover, the structure and place of the clergy in Shia Islam is different. The classical Islamist views, as expressed in the early part of this paper are being debated within and outside the community and are being constantly

modified, and many modern Islamic writers like Tariq Ramadan and Amr Khaled, both of whom figure in *Time Magazine's* list of most influential people in the world, have extensively written about it. The young Arabs using Facebook, YouTube and Twitter are unwilling to surrender their freedom to religious bigots. Many Islamist parties which had their roots in the *Salafist* interpretation of Islam like Muslim Brothers in Egypt and Al Nahda in Tunis, correctly reading the mood of youth, have adopted moderate views on many issues such as wearing veils, banning alcohol, pluralism and women's rights.

The detractors in the Muslim world as well as in the West, feel that once in power, Islamists, like the Communists of yore, would never let go power, and if they lose elections, they would nullify them on some pretext or the other. However, the alternative, of preventing them from coming to power by undemocratic means has been tried out in Turkey, Algeria, Egypt and Tunis and has benefited neither the people of those countries nor the West. Banning Islamist parties is likely to push them underground and may even foment violence. Therefore, it is only wise that they be given a chance to prove their democratic credentials. These parties have moderated their views not because of any external pressure, but because their own young generation is no longer willing to adhere to orthodoxy. Therefore, even when in power, they would not be able to revert to orthodoxy.

### **THE SHAPE OF THINGS TO COME POST ARAB SPRING: A PROGNOSIS**

Opinion polls and other independent surveys have time and again shown that a majority of Muslims living in 56-odd Muslim countries, favour Islam as the main guiding principle of the state. They are completely disillusioned with the all pervading corruption, social injustice and despotism. While the nostalgia for the "Medina Model" is strong, they freely acknowledge that it cannot easily be applied to a modern complex state and even less to an international order based on modern secular values. But there is also a consensus that a Western style liberal democracy based on secularism cannot be a model for Islamic societies. The Islamic intellectuals point

to frequent failures where the model has been attempted in Islamic societies and its inevitable lapse into authoritarianism and oppression due to resistance from the masses. They believe that in Islamic societies, religion can never be entirely separated from the affairs of the state because it is so deeply entrenched in the life of an individual Muslim.

**There is also a consensus that a Western style liberal democracy based on secularism cannot be a model for Islamic societies.**

There are several functioning democracies in the Muslim world such as Turkey, Pakistan, Malaysia, Indonesia, and Bangladesh. But religion plays an important role in the affairs of the state in all of them. Turkey, for a long time, tried to model itself on the Western pattern as the legacy of Mustapha Kemal, but in the last decade or so, the Islamic parties or the closet Islamic parties have been an important part of its political landscape. Recently, Bangladesh has amended its Constitution to make it more secular, but it is still not clear that such changes can last.

The Islamists in the Arab world are increasingly looking at the Islamists of Turkey, who have been in power for nine years and won two elections, for inspiration and example. They have not enforced any radical Islamic measures, have improved Turkey's foreign relations, uplifted her economy, run a relatively clean government and tamed a coup prone army through constitutional measures. If the incoming post revolution Arab governments can emulate Turkey's achievements, not only would the pall of gloom lift from their people, but the world would also get convinced that it has nothing to fear from Islamists and that Islam and democracy can happily coexist.

The greatest challenge that Islamists would face, if they come to power, is to shape modern political institutions on credible Islamic foundations acceptable to their main constituency. The task is not as difficult as it appears. The classical Islamic law is endowed with stirring political ideals many of them modern in their connotation. It is easy to infer from the revealed text and the *Sunnah* a foundation for popular participation in government (*shura, nasiha*), the social contract and the consent of the governed (*bay'a*), the rule of law (the sovereignty of God and the *Sharia*), the right to petition for redress

of grievances (*nasihah, mazalim*), the sanctity of individual life, liberty and property and their protection from state interference, equality of all before the law, office as public trust (*amana*) prohibition of embezzlement (*ghulul*) and bribery (*rishwa*), and other political ideals.<sup>11</sup> A majority among the Muslims believes that these ideals were practised under the early Caliphs who ruled from Medina and can be revived to provide a solid foundation for a just and equitable modern state.

The need of the hour, therefore, is for Muslim scholars and the *ulema* to get together and evolve political institutions and structures which are based on sound Islamic principles but are flexible enough to be applied to a far more complex social, financial and political world order. A majority of the modern generation of educated youth in virtually every Muslim country is of the view that it is necessary to liberate Islam from the clutches of orthodoxy which has given it a medieval orientation, and interpret its teachings so as to conform to its fundamental values like equality and social justice. This hitherto silent majority which is becoming increasingly vocal in the aftermath of the Arab Spring, is bound to triumph over the minority still insisting on an obscurantist version of Islam. The youth also feels that Islam must be liberated from strict legalism as advocated by Islamists and often made use of by unscrupulous power seeking politicians in many Muslim countries whenever it suits them. The *Sharia*, with the exception of some fundamental points, is not rigid and is open to reinterpretation.

Three methods have been recommended by the Islamic scholars to do so. These are conscientious striving by the learned or *ijtihad* ; logical rationalisation through analogy or *qiyas* ; and consensus or *ijma*. These methods are to be used when no specific directions on an issue are available in the revealed text or can be inferred from the *Sunnah* or the practice of the Prophet. Hence, the *Sharia* was constantly evolving in the early part of Islamic history and was finalised in its present shape some 150 years after the death of the Prophet, through the four Sunni Imams and one Shia Imam who used the aforementioned methods. There

---

11. *Ibid.*, p. 116.

is no reason why these methods cannot be used again for resolving contemporary polemical issues facing the *ummah*. The opinion polls and the other media inputs indicate that a vast majority of people in the Muslim countries reject the Taliban or the Saudi version of the Islamic state and favour a mildly Islamic version. There is no denying that the debate on pluralism and gender rights among Islamic scholars is inchoate and inconclusive. A lot needs to be done on the status of non-Muslims, though recent debates on the subject emphasising the shared rights and duties of all inhabitants of the land, suggest that a concept of citizenship may be gradually evolving. The first agreement that the Prophet made with the non-Muslim pagans and the Jews of Medina is a remarkable document in the context and needs to be studied as a pointer because it talks of a state comprising a community practising different faiths yet bound together on the basis of mutual trust and common territory.

The international implications of strong Islamist representation in the post revolution governments in the Arab world are likely to be significant though not necessarily game changing. Many Islamist parties, during the upheaval and even earlier, have shown expediency and pragmatism in cooperating with the US and the West. The Syrian Muslim Brotherhood did not shy away from cooperating with the US in opposing the Iranian-Syrian-Hezbollah axis and the Lebanese Muslim Brotherhood, known as al-Gama'a al-Islamiya, made common cause with the US to oppose Syria's and Hezbollah's role in Lebanon. Similarly, Islamist elements among the Libyan rebels had no qualms in cooperating with the North Atlantic Treaty Organisation (NATO) in ousting Gaddafi. But, on the other hand, any popular government in the Arab world and more so an Islamist one, will come under pressure to take a strong anti-Israel and pro-Palestinian stand, and will have to do so by opposing blindly pro-Israel actions by the US due to its domestic politics. The popular governments are also likely to follow a more active and independent role on other sensitive foreign policy issues, especially those dealing with Muslim countries.

## INDIA AND THE ARAB SPRING

Despite her claims to multilateralism and resolve to play a more constructive role in world affairs, befitting her new found status of a trans-regional power, India's attitude to happenings in the Middle East has been extremely cautious. She was ambivalent for many days before backing the Egyptian revolution, and abstained on UN Security Council (UNSC) Resolution 1973 authorising the use of force in Libya in March 2011 as well as on the UN Human Rights Council condemnation of the Syrian government's human rights violations in August 2011. These actions convey an impression that despite being the largest democracy in the world, New Delhi is reluctant to take up cudgels against autocratic and oppressive rulers and, on this issue, stands with the group represented by Russia and China, two major violators of human rights in their domestic policies.

While it is true that India lacks strategic resources and economic leverages to influence events in West Asia, her principled stand in defence of the democratic rights of the people of this vital region and against tyrannical rulers, rather than conventional and overcautious non-interference in the internal matters of another state, would have shown her as an effective member of the world community and served her long-term interests in the region better. India's abstention on the UN Human Rights Council Resolution condemning Syria is even more baffling because Indonesia, the largest Muslim country in the world, and Saudi Arabia, Jordan, Kuwait and Qatar, all voted in favour of the resolution. The abstention, perhaps, also reflects the scanty knowledge of the ground situation. Syria is in an untenable political situation, because a small Alavite minority has had a stranglehold on power for too long with the help of the creamy layer and the army. The Syrian Army also has an extremely lop-sided structure with the minority Alavites forming the majority of the officer corps whereas the troops are mainly Sunni—this situation may no longer be tenable in the wake of the Arab awakening and the free elections which Syria might be forced to undertake under international pressure. Therefore, making any concessions to Bashar al Assad's regime is unlikely to pay any diplomatic dividend.

New Delhi should carefully study the situation emerging out of the turmoil in the Arab world and be prepared to boldly back the winners. It should also prepare itself to do business with the new ruling groups with an Islamic tinge. Most Islamists in the Arab world look at India favourably as a fellow developing country which has always followed an independent foreign policy favouring Arabs in their struggle against Western hegemony. India's fair treatment of her Muslim minority is also generally lauded. But on the flip side, it would need to manage the tricky Kashmir issue with diplomatic dexterity. It will be imprudent if we allow our fears on the 'K' question to cloud our vision in deliberately backing the wrong horses in a region wherein we have multiple interests



# NUCLEAR DOCTRINE AND DETERRENCE: A CHINESE PERSPECTIVE

S. RAJASIMMAN

Some 2,500 years ago, Sun Tzu recommended that, if possible, one should occupy the high ground. Space provides a new aspect to this principle: unimpeded access to outer space and unrestricted freedom to use outer space and the celestial bodies provides a tempting opportunity for a technologically advanced country to seize control of outer space and deny freedom of its use to other countries that stand in its way<sup>1</sup>.

The strategic balance pertaining to nuclear weapons in the present scenario (worldwide) exists in a *status quo* (explained by the deterrence theory) which is likely to become unstable with the perfection of missile defence systems (ground and/or space-based). This development is likely to question the prevailing deterrence theory which banks upon the *principle of uncertainty*<sup>2</sup>.

---

Shri **S. Rajasimman** is an Associate Fellow at the Centre for Air Power Studies, New Delhi.

1. Paul B. Larsen and Francis Lyall, *Space Law: A Treatise* (UK: Ashgate, 2009), p.499.
2. According to the *principle of uncertainty*, a nuclear exchange is ruled out for the simple reason that no actor is willing to initiate a nuclear exchange for the risk of retaliation, based on a certain calculation that the actor cannot guarantee complete annihilation of an opponent's nuclear arsenal. This dilemma is central to the deterrence theory.

**Both India and China emphasise the value of strategic force in negating the deterrence and compellence strategies of others, more than the United States does.**

“Deterrence”<sup>3</sup> is a word with many connotations, and some of its concepts are not similar in the case of different actors (India, the United States, Pakistan, and China). While both China and India have designed their nuclear doctrines by stressing on assured (or massive) retaliation (*no first use*), the Pakistani and US doctrines are based on threat (perception) and preemption<sup>4</sup>. However, while both countries (India and China) prefer a nuclear strategy that is based on a minimum number of nuclear warheads, India seeks *credibility* and China is expected to move towards a *limited* deterrence posture. While China’s true capability and doctrinal understanding are ambiguous and uncertain, there is debate in India regarding whether secrecy is impacting its deterrence negatively. Both countries include *disarmament* as a final objective<sup>5</sup>.

These different approaches to a nuclear doctrine are inherently opposed to each other and in conflict. However, many of the strategic concepts align closely, for example, the value and importance of nuclear weapons in inducing dread and restraint. A certain conceptual clarity in the difference in approaches while constructing a nuclear doctrine by various actors could provide the yardstick to gauge the future directions it is likely to take.

- 
3. The word “deterrence” is derived from the Latin *de+terrere*, literally “to frighten from” or “to frighten away”. Thus, fear is central to the original meaning of deterrence. The idea that vast, indiscriminate, and unacceptable damage would be inflicted in retaliation for aggression, as was associated with the prospect of the aerial bombing of open cities in the 1930s, or the employment of nuclear weapons since World War II, has long been central to the popular understanding of the term deterrence. John C. Hopkins and Steven A. Maaranen, “Nuclear Weapons in Post-Cold War Deterrence” *Post-Cold War Conflict Deterrence*, Appendix E (Los Alamos National Laboratory, 2006), p.1-2.
  4. The US nuclear strategy, which obtained from the 1960s until the collapse of the Soviet Union, was extended nuclear deterrence. Under this doctrine, the United States deterred a direct attack upon itself with strategic nuclear forces, while extending protection to its Cold War allies and friends by promising to escalate a war to the nuclear level if they were in danger of defeat by Soviet-led forces, even if this entailed first use of nuclear weapons by the United States. *Ibid.*, p.2. .
  5. Manpreet Sethi , “Fire in the Dragon: China’s Nuclear Doctrine and Strategy” in *Nuclear Strategy: India’s March Towards Credible Deterrence* (New Delhi: KW Publishers Pvt Ltd), pp.116-117.

Both India and China emphasise the value of strategic force in negating the deterrence and compellence strategies of others, more than the United States does. While China operationalises a doctrine which is based on *negation*, the United States locates it at *threat* (perception) and *preemption*<sup>6</sup>. By this logic, China wants to successfully discourage an adversary from opting to use nuclear weapons (or threatening their to use). It invokes the term “counter-deterrence” to describe its strategy in a way the United States does not. And this requires “counter-deterrence operations” for the purposes of signalling resolve, including counter-attack and reattack. China’s emphasis on such operational roles for strategic weapons in achieving strategic results is unmistakable – and rather *different* from the United States that seems to rely simply on the long shadow of its vastly more numerous arsenals to induce restraint by potential adversaries. However, there is a perception in the United States that nuclear weapons are a burdensome legacy of the Cold War that have lost their relevance and perhaps become counter-productive to American and international security. Deterrence is understood as vital to the US national security strategy, but perhaps it can be achieved by a combination of actions ranging from preventive diplomacy to military deterrence by means of modern conventional weaponry. In the present times, military deterrence remains an important US tool, but nuclear weapons have now assumed an unstated (but powerful) supporting role, while American, allied and multilateral conventional forces currently supply the bulk of day-to-day deterrence. This analysis argues that in the future (given the developments in science and technology), *space and its weaponisation* is likely to be a crucial determinant in gauging the possible restructuring that China’s nuclear doctrine is likely to undergo.

---

6. The need for caution has been reinforced by the revelations about the quality of US intelligence on WMD that followed the intelligence failures vis-a-vis the WMD programme of Saddam Hussein. As argued by the Commission on the Intelligence Capabilities of the United States Regarding Weapons of Mass Destruction, in its cover letter to the President, of March 31, 2005, “We still know disturbingly little about the weapons programs and even less about the intentions of many of our most dangerous adversaries.” This is a cautionary reminder of the need to treat information, even that which is provided by the US government, with an element of caution that admits the possibility that it may be wrong or misleading in some significant respects.

China considers weaponisation of space as a destabilising move, and links the technological development of ballistic missile defence as the *first step* in this direction. All kinds of space-based weapon systems have been considered by the People's Republic of China (PRC) as *first strike (offensive)* weapons due to the *vulnerability associated with space weapons*. This characteristic of space weapons is likely to induce a shift in the Chinese nuclear doctrine. This framework helps in concluding the accurate meaning of China's Anti-Satellite (ASAT) weapon demonstration in January 2007. This test was in terms of body language, an invitation to the United States to show seriousness on negotiating a space weaponisation treaty, which the US has been conveniently ignoring and avoiding. This difference is also due to concepts that make for deterrence theory in India and China vis-à-vis the US.

In the present scenario, under certain conditions (which have been well substantiated), the nuclear threshold levels are likely to drop and escalate the possibility of a nuclear exchange between India and China, the main reasons being tactical nuclear weapons, and lack of any serious institutional arrangement to avoid non-intentional use of nuclear weapons<sup>7</sup>. The premise here being that the doctrine which was held so far by the literature as defensive in the case of China and India, is now likely to get offensive in orientation. However, this shift needs to be accommodated within the overall defence and foreign policies of both countries. A minor shift in the nuclear doctrine is likely to cause major shifts in the other domains. It can be argued that this transition from defensive oriented nuclear doctrine to offensive is but a natural trend. As technology improves and makes a military (nuclear) solution viable, it is likely that the political elites may have a strong attraction for it and choose it or threaten to use it. This may be detrimental to China's overall foreign policy objective in peace-time. It will make little sense to alter it, at least at the rhetorical level, since No First Use (NFU) does make China appear less belligerent, more internationally acceptable, and even benign! It is also debatable whether first use would

---

7. These observations were expressed as part of the lecture delivered by Prof. Srikanth Kondapalli to senior level officers from the Indian Army, Navy and Air Force, on *China's Nuclear Doctrine* on September 9, 2011, at the Centre for Air Power Studies, New Delhi.

actually serve any purpose, and not prove to be suicidal instead. It can be argued that the shift in the NFU policy is unascertained at the operational or doctrinal/rhetorical level. If it is doctrinal, it is likely to put the region in a state of high alarm and set similar readjustment in foreign policy. This paper argues that this is likely if the development in space and its weaponisation is taken into account. China has an often made offer: a *universal no first use treaty*. On the other hand, if it is operational, then, as a RAND study of 2005 concluded, where use of force involves core interests such as sovereignty or territorial claims, Beijing “could claim military preemption as a strategically defensive act...” Even if nothing has been forthcoming from the Chinese side on this issue that either confirms or negates it, it is to suggest that *sovereignty* and *territorial integrity* are the key determinants that can produce an animation of how China is going to incorporate the first or no first use policy. It involves the United States of America, with its active policy of a “new world order”. This is explained in three parts, which constitute nuclear weapons and their role in international security.

#### **WHY WERE NUCLEAR WEAPONS USED (1945) AND SINCE THEN NOT USED?**

Technically, nuclear weapons were used by the United States of America against Japan during World War II for the first time, and since then, have never been used. There is a crucial link between why the nuclear weapon was used then and not used since then. Why did the Allied powers use nuclear weapons against Japan? It was a strategic necessity, for Japan had located itself in a far superior military strategy than the Allied powers. It was the supply chain which did the trick for Japan. Since Japan was strategically inferior in scale, it adopted a weak man’s strategy. It first reduced the Pacific Fleet strength of the United States Navy with a preemptive strike at Pearl Harbour and then embarked upon acquiring immediate territories, converting them into buffers, and protecting them with land aviation. Japan’s war effort was located primarily in Japan itself and it continued supplying the war efforts generated at home, well secured, to its newly acquired territories. Clearly, there was no point fighting the Japanese anywhere in

Southeast Asia. The Allied powers were scattered and were moving their logistics all across the globe which reduced efficiency and was immensely costly for the result it produced. As this error in strategic thinking was realised within the Allied strategic circle, it became clear that the centre of gravity of the conflict for Allied power was in Japan. Therefore, the decision to bomb Japan, or else the war efforts would be prolonged without achieving any particular objective. It saved time, money and lots of lives. It can be argued that there was a certain military rationale that explains the use of nuclear weapons—the same may hold in the present or future times. However, it needs also to be ascertained as to what explains the non-use of nuclear weapons for six decades. The military rationale only explains the use of the weapon but cannot explain the consequence that unfolds after its use. Therefore, after its first use, the nuclear weapon ceased to be a military instrument since it could not justify the consequences of its use. It then transformed into a political instrument, the only way its possession and existence could be justified. The deterrence theory that developed since then locates the real use of the nuclear weapon in its non-use. In other words, it is used to extract maximum political mileage by managing the adversary's threat perception. Both India and China value this feature of deterrence while formulating their nuclear doctrine and posture.

#### **DISARMAMENT: A FANTASY OR REALITY**

Disarmament is usually referred to as an “international political condition” where no nation (a sovereign) possesses nuclear weapons and the world is free of nuclear war in absolute terms. However, it can be argued that this truth is a fantasy, for disarmament and nations (sovereign) cannot coexist. The international system as it exists today cannot incorporate both values—*disarmament* and *sovereignty*— simultaneously and, therefore, the need for stop-gap arrangements such as the Comprehensive Test Ban Treaty, Partial Test Ban Treaty, Fissile Material Cut-off Treaty and Nuclear Non-Proliferation Treaty (CTBT, PTBT, FMCT, and NPT). Within these treaty commitments, sovereignty is not completely compromised. India and China have in the past treated these arrangements as partial and resisted

joining them. Maintenance of *sovereignty* and *territorial integrity* are two important functions of a state (nation). Hypothetically, in any political condition where disarmament is a reality, the state would have been relieved of its duty to maintain these two functions. *Disarmament, in other words, is absence of sovereignty*. Therefore, the international community is not attempting to reach a point of disarmament but only to move towards it, and this involves international politics<sup>8</sup>.

**Partial suspension of absolute sovereignty is held in Chinese political rhetoric as a century of humiliation and, therefore, the need for regaining China's rightful place in the international system in the 21<sup>st</sup> century.**

#### **ABSENCE OF SOVEREIGNTY: WHAT IS THAT?**

For both India and China, their absolute sovereignty was suspended for a while from the 16<sup>th</sup> century onwards, as industrialisation in Europe brought the Western powers to their doorstep. Trade and its concern for the Western powers took them towards the path of using force in order to bargain for trading rights (the Opium Wars). This partial suspension of absolute sovereignty is held in Chinese political rhetoric as *a century of humiliation* and, therefore, the need for *regaining China's rightful place* in the international system in the 21<sup>st</sup> century. It can be argued from a high nationalist point that Europe presently no longer has sovereign entities that constitute it (at the least, in the economic dimension). However, the truth being that there has been a qualitative transformation in *sovereignty* as it has been practised in Europe since the end of World War II. It has moved from clashing national identities to a more international level, with the European Union as a common identity. The catch is that this transformation is true only for trade related matters. It helps the economics if Europe functions on

---

8. Thus, today we see that nobody is trying to expound the idea of "tipping point", in which they predicted that by 2020 certain things would happen, but refused to fix a particular date for the total elimination of nuclear weapons; nobody is even demanding it. The "four horsemen" (of nuclear disarmament) – George P. Shultz, William J. Perry, Henry A. Kissinger and Sam Nunn – have only said that we should move towards it. Transcript of a lecture delivered by the late K. Subrahmanyam at the Association of Indian Diplomats, Sapru House, New Delhi, on April 28, 2010. The author was a senior strategic analyst and former Director of the Institute for Defence Studies and Analysis, New Delhi.

a single economic platform. Banks would prefer this. While this transition has occurred in Europe, the sudden burst of national identity or its quest still surprises many analysts. There is this *force* in the international system that requires putting the whole world into one particular system for pure economic reasons. Starting with the Senior Bush, it was a stated policy of the United States of America to actively pursue and establish a *new world order*. It is required within this policy that nation-states across the globe display less concern for sovereignty (particularly with regard to trade). The one world government and one banking system are some underlying objectives of this policy.

### WHAT IS A DOCTRINE?

Before discussing the Chinese nuclear doctrine and its likely course for the future, it is important to have clarity on what the doctrine and its function are? The term doctrine has been articulated by various scholars in various forms and shape, providing room for its inaccurate interpretation and understanding. *Doctrine is either a culminating point or the initial point (depending on how one chooses to see it) of bringing together almost everything that goes into war-fighting, peace-building, and elements of national security itself. Its function is comparable to a transformer. It converts capability, intentions, perception, and power (political and military) into action with a pre-set objective conceived by it.* Without an appropriate doctrine, it is not possible to act (in a particular way). Capability and strategy will not produce the required result if they are not placed within the appropriate doctrine.

In that sense, it is not a strategy or a way of doing things that presents the extent and limits of an action (political, diplomatic, and military). Its importance is understood clearly if it is viewed as symbolic or representative. It is an overall summation of the reality as it is decoded for decision-making in a space where time is constrained (war-fighting situation). It is a connecting tissue and must not be understood in the literal sense. A doctrine is a sort of declared secret. It requires a careful analysis in order to interpret it. The bulk of the literature has so defined *military doctrine* that it also includes elements of military strategy. According to Dale Smith, a military doctrine is a set of

views on war and the principles concerning its conduct that are adopted by the military leadership, taught in military academies and which provide the basis for war plans. Therefore, military doctrines represent beliefs about the kind of war the military expects to fight and the accepted wisdom about the best method for fighting it<sup>9</sup>. For example, amidst the Cold War, both the US and Soviet Union, at a certain point, realised that the *number of warheads* was of no significant importance due certain breakthroughs in the deterrence theory, which was now understood (as explained above) based on the *principle of uncertainty*. It was felt (in theory) that a minimum number of warheads could achieve a similar deterrence level as a maximum number of warheads. This meant a doctrinal shift accordingly. The introduction of air power since the 1920s and 1930s also induced shifts in military doctrine at that point in time<sup>10</sup>. Doctrine is the summation of reality, which cannot be ignored, while using certain capability in accordance with a strategy.

#### **SPACE AND ITS INCLUSION IN THE CHINESE NUCLEAR DOCTRINAL STRUCTURE**

China believes that the US is, in the most certain terms, moving towards *space weaponisation*. It is a calibrated move whenever the US is pursues a number of research programmes to enable the development of space weapons, which can be used not only to attack ballistic missiles in flight but also to attack satellites and targets anywhere on the earth. Beijing considers this to be highly destabilising and that it directly alters the strategic stability (*based on deterrence through denial*) that prevailed until now. While China acknowledges that the US intention might be to safeguard its space assets by placing weapons in space, it is counter-productive. Countries like China, India, Russia will oppose these initiatives at the political level and also militarily, triggering an arms race. Existing international legal instruments are inadequate to prevent outer space from being weaponised; however,

---

9. Rajesh Rajagopalan, "Doctrine, Strategy and Nuclear Weapons" *Air Power Journal*, vol.3, no.3, Monsoon (2006) (July-September).

10. Maaranen and Hopkins, n.3.

these instruments<sup>11</sup> have played a positive role in promoting peaceful use of outer space and regulating outer space activities. Space weaponisation fails the purpose of China's nuclear deterrent. Given the historical circumstances in which China embarked upon its nuclear journey, the immediate purpose of the weapon was to impose deterrence against the use or threat of use of nuclear weapons. China's deterrence theory envisions a "minimum number" of nuclear weapons to achieve the required deterrence.

- 
11. Since 1960s, the international community has instituted a series of legal instruments on outer space, including the 1963 Limited Test Ban Treaty (LTBT), the 1967 Outer Space Treaty (OST), the 1979 Moon Agreement as well as some bilateral agreements. (1) Limited Test Ban Treaty (LTBT); Article I 1(a) of the Limited Test Ban Treaty (Treaty Banning Nuclear Weapon Tests in the Atmosphere, in Outer Space and Under Water, LTBT) prohibits "any nuclear weapon test explosion, or any other nuclear explosion" from being carried out "in the atmosphere; beyond its limits, including outer space". However, the LTBT addresses activities regarding only nuclear weapons in outer space and does not cover other weapons. (2) The Outer Space Treaty (OST); Paragraph 1, Article IV of the Outer Space Treaty (Treaty on Principles Governing the Activities of States in the Exploration and Use of Outer Space, including the Moon and Other Celestial Bodies) prescribes that States Parties to the Treaty "undertake not to place in orbit around the Earth any objects carrying nuclear weapons or any other kinds of weapons of mass destruction, install such weapons on celestial bodies, or station such weapons in outer space in any other manner". This provision bans the deployment of weapons of mass destruction in orbit around the earth, on celestial bodies and in outer space, but does not deal with weapons other than WMD, such as conventional weapons and new types of weapons based on other physical principles. Paragraph 2, Article prescribes that, "the moon and other celestial bodies shall be used by all States Parties to the Treaty exclusively for peaceful purposes. The establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on celestial bodies shall be forbidden." However, this does not include orbits to and around the moon and other celestial bodies. (3) The Moon Agreement; (only 16 countries so far have ratified it, therefore, making it non-universal) Article 3(2) prescribes that, "any threat or use of force or any other hostile act or threat of hostile act on the moon is prohibited. It is likewise prohibited to use the moon in order to commit any such act or to engage in any such threat in relation to the Earth, the moon, spacecraft, the personnel of spacecraft or man-made space objects". Article 3 (4) prescribes that, "the establishment of military bases, installations and fortifications, the testing of any type of weapons and the conduct of military maneuvers on the moon shall be forbidden. The use of military personnel for scientific research or for any other peaceful purposes shall not be prohibited. The use of any equipment or facility necessary for peaceful exploration and use of the moon shall also not be prohibited." This provision prohibits only tests and use of weapons of any kind on the moon, and the use of such weapons from the moon against the earth, spacecraft and the personnel. However, activities of such kind in the moon orbit and in outer space other than the moon are not covered. Article 3(3) prescribes that, "States Parties shall not place in orbit around or other trajectory to or around the moon objects carrying nuclear weapons or any other kinds of weapons of mass destruction or place or use such weapons on or in the moon". This provision bans only the deployment of weapons of mass destruction on the moon and its orbit, but does not deal with weapons of other kinds (conventional). The Anti-Ballistic Missile Treaty of 1972 required not to develop, test or deploy space-based anti-missile systems. The treaty became null and void when the US withdrawal decision entered into force on June 13, 2002.

Jiang Zemin<sup>12</sup> indicated in a December 2002 speech to the expanded Central Military Commission (CMC) that space would be of growing importance in the context of the ongoing Revolution in Military Affairs (RMA). This increasing role of space is further noted among the new “historic missions,” as pronounced by Hu Jintao. “Historic missions” imply a more capabilities-oriented perspective, rather than a contingency-based one, as it prepares to safeguard the security of the Communist Party of China (CPC) and the People’s Republic of China (PRC). The areas of concern for national security have expanded. Where once the People’s Liberation Army (PLA) was focussed on defending China’s land borders and the CPC, and, to a lesser extent, repelling a seaborne invasion, now it must keep watch over new regions and functional areas. That, in turn, is likely to have ramifications upon all aspects of PLA military planning, including for military operations in space. The following stand out in terms of a capability oriented approach:

- **Space Warfare:** missile, space plane, and laser-based space weapons
- **Space Information Architecture:** Surveillance, navigation, communications, and Electronic Intelligence (ELINT) satellites.
- **Anti-Ballistic Missile (ABM) Defences:** China is most likely developing an ABM system which could be deployed after 2020.
- **Manned Moon Presence:** To secure China’s potential military and economic interests.
- **Nuclear Missiles:** Three types of new solid-fuel intercontinental ballistic missiles and submarine launched ballistic missiles (ICBMs and SLBMs) in or near deployment.
- **Energy Weapons:** High-power microwave weapons now deployed (lasers to follow?)
- **Fifth Generation Combat Jets:** Two, possibly three, fifth-generation programmes are underway.
- **Unmanned Combat and Surveillance Jets:** Three air companies have active programmes.

---

12. Jiang Zemin, “Discussing the RMA with Chinese Characteristics” in *Jiang Zemin Wenzai* (*Selected Works of Jiang Zemin*) (Beijing: People’s Publishing House, 2006), pp.576-583.

- **Nuclear Submarines:** New nuclear attack and ballistic-missile submarines now being built.
- **Aircraft Carriers:** Chinese naval carriers, informally, say four to six may be built.
- **Anti-ship Ballistic Missiles:** A revolutionary weapon that only China is building
- **Large Amphibious Assault Ships:** 20,000-ton Landing Platform Dock (LPD) being built and a Landing Helicopter Dock (LHD) in development.
- **Large (60-ton capacity) Airlifters:** Proposals from both of China's air consortia.
- **Airmobile Army Forces:** Developing a new family of airmobile wheeled combat vehicles.

The 1997 *PLA Military Encyclopaedia's* entry on "space warfare" (*tianzhan*) explicitly stated that space was not decisive in the battlefield—the key to war-time victory would remain in the traditional land, sea, and air realms. "It is impossible for it (space warfare) to be of decisive effect. The key determinant of victory and defeat in war remains the nature of conflict and the human factor"<sup>13</sup>. However, in 2002, at the beginning of the Hu Jintao leadership era, the tone had already changed. In the 2002 supplement to the *PLA Encyclopedia*, a very different assessment is made of the importance of space. In its discussion on the "space battlefield (*Taikong zhanchang*)," the entry concludes with the observation that the impact of the space battlefield will become ever greater and the space battlefield "will be a major component of future conflict"<sup>14</sup>. It is clear that space, in the interval, was perceived as a substantially more important arena for military operations. In January 2007, the shoot-down of a Fengyun-1C weather satellite made clear that not only has the PRC been engaged in the research and development of anti-satellite

---

13. Dean Cheng "Prospects for China's Military Space Efforts" in Roy Kamphausen, David Lai and Andrew Scobell, eds., "Beyond the Strait: PLA Missions Other Than Taiwan," *Strategic Studies Institute: US Army War College*. Available at <http://www.strategicstudiesinstitute.army.mil/>.

14. PLA Encyclopedia Committee, *Chinese Military Encyclopedia*, Supplemental Volume (Beijing: Military Science Publishing House), 2002, p.455.

weapons, but has reached the point where such systems are being unmistakably tested. One of the more prolific Chinese military space analysts, Senior Col Li Daguang, of the PLA's National Defence University, similarly observed in an article published simultaneously in the *Liberation Army Daily* and *National Defence Daily*, that “**information dominance** (*Zhi xinxi quan*) cannot be separated from **space dominance** (*Zhi tian quan*). It can be argued that seizing space dominance is the root for winning the informationalised war”.

**It is impossible for it (space warfare) to be of decisive effect. The key determinant of victory and defeat in war remains the nature of conflict and the human factor.**

Space dominance has been understood to be a temporary condition even during the course of the conflict. PLA authors note that space dominance is different from the more traditional air or naval dominance. Li Daguang, for example, observes that while space dominance is a prerequisite for air and naval dominance, it is likely to be more expensive and difficult to achieve, because of the uniqueness of the space environment<sup>15</sup>. Moreover, like information dominance, it is more difficult to wholly prevent an opponent from entering space. Therefore, securing and retaining space dominance throughout the course of a conflict is likely to require sustained effort; the alternative is to accept that *space dominance will probably be a more temporary condition*.

The requirement of preparing for local wars under modern high-tech conditions in the 1990s and early 2000s led the PLA to shift towards a more “joint” approach to future wars and campaigns. With the growing importance of information technology, as acknowledged by the need to prepare for *local wars under informationalised conditions*, the emphasis has shifted towards unified operations, incorporating the ability to secure information dominance in order to create a common situational awareness among the disparate forces. In the recent views of PLA analysts, space dominance is essential. This, in turn, suggests that any future conflict involving the PRC is likely to entail military operations that affect the

---

15. Cheng, n.13.

space system. Where once the PLA could focus primarily on local defence of the homeland, it must now consider how to secure Chinese interests regionally, and eventually even globally. Where once the PLA could focus on protracted wars of annihilation, relying on mass and attrition, now it must be capable of fighting much more abbreviated wars of paralysis that rely on technology and rapid reaction. The PRC's ability to secure space dominance will affect its broader ability to obtain security for itself. The impact of military space operations is not simply, then, the ability to engage a given satellite or deploy a constellation, but increasingly relates to the larger issue of sustaining and supporting the greater national interest. This suggests that PRC and PLA activities in space must be analysed with an eye not only towards war-fighting capabilities, but also in the context of deterrence and doctrine.

China pursues a differentiated strategy, one that seeks limited deterrence in its theatre nuclear force posture and an offensively configured, preemptive, counter-force war-fighting posture in its conventional missile forces<sup>16</sup>. At this stage of its development, China's nuclear doctrine does not explicitly distinguish between the two mission sets, "Taiwan" and "beyond Taiwan". China's scant but growing official literature distinguishes between the specific requirements of deterrence vis-a-vis Taiwan (and of the United States and its allies involved in a Taiwan contingency) and the broader mission set. This reflects the top-level guidance to develop capabilities to deal with the generic challenges of "high-tech local war under the conditions of nuclear deterrence"<sup>17</sup>. "China's requirements of its regional deterrent have resulted in a force structure larger and more diverse than the requirements of its intercontinental deterrent. And, furthermore, China's force modernisation strategy has generated more new replacements for theatre than intercontinental capabilities, so far<sup>18</sup>.

---

16. *Ibid.*, p. 196.

17. *Ibid.*, p. 196.

18. An analysis of China's missile testing pattern exhibits a higher number and frequency of tests for short range than long range. These observations were expressed as part of the lecture delivered by Kondapalli, n.7.

However, US military planning documents issued during the course of the last decade suggest serious efforts by the US for *control of space* aimed at global superiority on earth<sup>19</sup>. In April 2002, Vice Foreign Minister Qiao Zonghuai summarised the official Chinese view of US plans;

Considerable progress has been made in outer space-related weapons research and military technology. It will not take long before drawings of space weapons and weapon systems turn into lethal combat instruments in outer space. Meanwhile, military doctrines and [concepts] such as “control of space” and “ensuring space superiority” have been unveiled successively, and space operation [command] headquarters and combatant troops are in the making. If we should remain indifferent to the above-mentioned developments, an arms race would very likely emerge in outer space in the foreseeable future. Outer space would eventually become the fourth battlefield besides land, sea and air. If such a scenario should become reality, it would be virtually impossible for mankind to continue their anticipated exploration, development and utilisation of outer space, and all economic, cultural and social activities in connection with the utilisation of outer space would be severely interrupted<sup>20</sup>.

The scope of space weaponry, generally accepted by many Chinese includes *not only* weapons stationed in outer space, but also weapons based on the ground, at sea or in the air that target objects in outer space. Outer space objects, in the Chinese definition, include not only satellites but also ICBMs travelling through outer space<sup>21</sup>. For example, the Chinese believe that the current Ground-based Mid-course Defence (GMD) system deployed

---

19. In its 2003 report, “Transformation Flight Plan”, the US Air Force lists a number of space weapon systems desirable in the event of a space war. *US Air Force Transformation Flight Plan, 2003*. See: [http://www.af.mil/library/posture/AF\\_TRANS\\_FLIGHT\\_PLAN-2003.pdf](http://www.af.mil/library/posture/AF_TRANS_FLIGHT_PLAN-2003.pdf). These include space-based kinetic kill vehicles.

20. Qiao Zonghuai, “An Effective Way to Prevent an Arms Race in Outer Space: The Early Negotiation and Conclusion of an International Legal Instrument,” speech presented at the China/UN Disarmament Conference, April 3, 2002, <http://www.fmprc.gov.cn/eng/29794.html>.

21. Liu Huaqiu, ed., *Arms Control and Disarmament Handbook* (Beijing: National Defence Industry Pub., 2000).

in Alaska is more of a space weapon. It is typical of Chinese understanding which claims that the Ballistic Missile Defence (BMD) system, in practice functions more like an ASAT weapon for the lack of the crucial breakthrough technology which enables it to track and kill an incoming ballistic missile while in outer space. Since there is a technology gap in doing so, GMD is an excellent ASAT. Therefore, it is being labelled as a space weapon though it is based on the ground.<sup>22</sup> The Chinese also include an incoming ballistic missile in outer space as an object in space. China, therefore, argues that US plans to deploy a missile defence system are an intentional first step toward the weaponisation of space. Furthermore, the US is pursuing space-based BMD for global engagement capabilities. It is believed that an effective, global-coverage BMD system must start intercepting an ICBM as early as the boost phase, which, under US Missile Defence Agency plans, would entail the use of space-based interceptors. The Chinese believe the US intentions regarding weaponisation of space comprise a clear and present danger for a number of space weapon-related programmes, such as the Near Field Infrared Experiment (NFIRE) satellite and space-based interceptor test-bed. However, the Chinese are clear about the fact that space-based weapons have a few important characteristic features:

- Space-based weapons *cannot* protect satellites.
- Space-based weapons are themselves *as vulnerable as satellites*; and can be attacked by multiple sources (less expensive and asymmetric) based on earth.
- The true aim of US space plans is *not to protect US assets* but rather to *further enhance American military dominance* with the objective of realising its strategic objectives on earth.
- Any space-based weapon system will have to *depend on an offensive doctrine* for the vulnerabilities associated with it (first strike).
- Space weaponisation by the US, in the Chinese understanding, is linked to its global hegemonic tendencies.

---

22. Hui Zhang, "Chinese Perspectives on the Prevention of Space Weaponization." *INESAP Bulletin* no. 24 December 2004: 25-28 and Fu Zhigang, "Concerns and Responses: A Chinese Perspective on NMD/TMD," *Consultation on NATO Nuclear Policy, National Missile Defense and Alternative Security Arrangements* (Ottawa: September 28-30, 2000).

In particular, China is concerned that the US missile defence network will undercut China's strategic nuclear deterrent. Even a limited missile defence system could neutralise China's fewer than two dozen single-warhead ICBMs that are capable of reaching the United States. China is even more concerned about space-based BMD systems that would be far more dangerous to China's nuclear deterrent than a non-space-based BMD system. In addition, Beijing is worried that the deployment of missile defence systems would further promote a preemptive US military strategy.

**China fears that the BMD network would give the United States more freedom and power to intervene in its affairs, including undermining the country's efforts at reunification with Taiwan.**

As viewed by Chinese leaders, China's own small strategic nuclear arsenal appears to be a plausible target for US missile defence. China fears that the BMD network would give the United States more freedom and power to intervene in its affairs, including undermining the country's efforts at reunification with Taiwan. Moreover, China is concerned that putting weapons in space would constrain its civilian and commercial space activities. China sees itself as a developing economic space power, dependent on free access to space for financial gain. However, US driven space weaponisation directly threatens this access. Therefore, to protect against the potential loss of its deterrent capability, China could potentially resort to enhancing its nuclear forces. As Hu Xiaodi, China's Ambassador for disarmament affairs, asked, "With lethal weapons flying overhead in orbit and disrupting global strategic stability, why should people eliminate weapons of mass destruction or missiles on the ground? This cannot but do harm to global peace, security and stability, and, hence, be detrimental to the fundamental interests of all states<sup>23</sup>.

In China's view, the most effective way to secure assets would be to agree on a space weaponisation ban. Ambassador Hu stated, "If any country is really worried about the possible menace to its space interests, this could

---

23. Hu Xiaodi, "A Treaty to Prohibit Weapons and War in Space? - Missiles: How Can we Reduce the Dangers They Pose?" *Journal of Nuclear Management*, vol. 30, no.4, Summer 2002.

certainly be alleviated through the negotiation and conclusion of a treaty on the prevention of space weaponisation, as suggested by China... Such a legally binding international treaty will be the best tool to safeguard the interest of all sides<sup>24</sup>." China's stance on banning weapons in outer space has been consistent since 1985, when it first introduced a working paper to the United Nations (UN) Conference on Disarmament (CD). China's most recent working paper on the issue, introduced in June 2002, emphasises three basic obligations: (1) not to place in orbit around the earth any objects carrying any kind of weapons, not to install such weapons on celestial bodies, and not to station such weapons in outer space in any other manner; (2) not to resort to the threat or use of force against outer space objects; and (3) not to assist or encourage other states, groups of states, international organisations to participate in activities prohibited by this treaty<sup>25</sup>.

In recent years, the UN General Assembly has adopted resolutions calling for the CD to begin negotiations on the Prevention of an Arms Race in Outer Space (PAROS) with an overwhelming majority of support. However, John Bolton, then US Undersecretary of State for Arms Control and Non-Proliferation, told the CD: "The current international regime regulating the use of space meets all our purposes. We see no need for new agreements<sup>26</sup>. However, the Chinese disagree since there are no existing treaties that effectively prevent the testing, deployment and use of weapons, other than those of mass destruction, in outer space. In addition, none of these instruments covers the threat or use of force from earth (land, sea and air) against objects in outer space. The history of proliferation has taught (us) that banning the testing and deployment of weapons from the outset is much more effective than attempting disarmament and non-proliferation. after the fact.

---

24. Hu Xiaodi, statement on armament affairs of China at the Plenary of the Conference on Disarmament, June 7, 2001. Available at [www.nti.org/db/china/spacechr.htm](http://www.nti.org/db/china/spacechr.htm). Assessed on August 17, 2011.

25. China and Russia, together with Indonesia, Belarus, Vietnam, Zimbabwe and Syria, co-sponsored a working paper on "Possible Elements for a Future International Legal Agreement on the Prevention of the Deployment of Weapons in Outer Space, the Threat or Use of Force against Outer Space Objects" (CD/1679), June 2002.

26. Statement by John Bolton, US Undersecretary of State for Arms Control and Non-Proliferation, to the Conference on Disarmament, Geneva, January 24, 2002.

The definition of space weapons is contested, and according to Chinese documents, space weapons would include: (1) any weapon stationed in outer space for the purpose of attacking any object in space, on the ground, in the air, or at sea; (2) any space-ground-, air-or sea based weapons that target objects in outer space.

- *Basing of weapons.*
- *Objects in outer space.*

Regarding the basing question, any weapon if stationed in outer space should be classified as a space weapon. This interpretation can easily be widely accepted. Here, the basing of an object in space is the key. As regards the question of what is an object in outer space, if the “object” refers only to satellites, then we can define the scope of the space weapon ban as applying to: any weapons stationed in outer space and any ASAT weapons (focussed approach). However, if the “object” refers not only to satellites but also to missiles traversing space, then space weapons will be defined (broad approach) as any space-based weapons, any ASAT weapons, and any anti-ballistic missile weapons intercepting missiles in outer space. Thus, the “focussed” approach would permit a non-space-based BMD system, while prohibiting a space-based BMD system. However, the “broad” approach would put a strong limitation on US missile defence system development. In its 2001 working paper to the CD on PAROS, China pointed out one of the three basic obligations as “not to test, deploy or use on land, in the sea or atmosphere any weapons, weapon systems or their components that can be used for war-fighting in outer space”<sup>27</sup>.

The prevailing view in China is that US space weaponisation plans will have disastrous consequences for international security and the peaceful use of outer space. The 2004 White Paper on China’s national defence emphasised, “Outer space is the common property of mankind. China hopes that the international community would take action as soon as possible to conclude an international legal instrument on preventing the weaponization of, and

---

27. Wang Xiaoyu, “Development of Antiballistic Missile System vs. the Prevention of an Arms Race in Outer Space,” Presentation at the WILPE Seminar “Prevention of an Arms Race in Outer Space,” Geneva, March 10, 1999.

arms race in, outer space through negotiations, to ensure the peaceful use of outer space<sup>28</sup>." In recent years, the UN General Assembly has adopted resolutions—annually, and with an overwhelming majority—calling for the CD to begin negotiations on PAROS. China and other nations have also advocated the negotiation of PAROS at the CD. Despite these efforts, the United States staunchly opposes any official discussion on outer space in this forum. The dispute has resulted in a deadlock at the CD in recent years. To resume and facilitate the CD negotiations on arms control, the issue of space weapons will have to be examined.

China perceives that the United States is pursuing a "space control" strategy. The US has issued a series of official statements in recent years that discuss the vulnerability of US space assets to attack without warning and the need to protect US satellites from all possible threats. The statements propose that the US respond with the forceful domination of space and denial of access to those who may intend harm<sup>29</sup>. Space control includes US access to, and freedom of, operations in space, while denying others the use of space. This mission includes: space surveillance, protection of US space systems, prevention or negation of an adversary's ability to use space systems and services for purposes hostile to US national security interests, and direct support for battle management, command, control, communications, and intelligence (counter-space operations). The negation mission would include "measures to *deceive, disrupt, deny, degrade, or destroy an adversary's space capabilities*<sup>30</sup>."

In 2001, the report of a special commission on US national security in space, chaired by Defence Secretary Donald Rumsfeld, warned of the need "to avoid a 'space Pearl Harbour.'" It was further recommended that the US

---

28. Information Office of the PRC State Council, "White Paper on China's National Defence in 2004," December 27, 2004, Available at <http://www.china.org.cn/e-white/2004-1227/index.htm>.

29. Qiao Zonghuai, "An Effective Way to Prevent an Arms Race in Outer Space: The Early Negotiation and Conclusion of an International Legal Instrument," speech presented at the China/UN Disarmament Conference, April 3, 2002, <http://www3.fmprc.gov.cn/eng/29794.html>.

30. US Joint Chiefs of Staff, *Joint Doctrine for Space Operations*, Joint Publication, 3-14, August 9, 2002. Available at [http://www.fas.org/irp/doddir/dod/jp3\\_14.pdf](http://www.fas.org/irp/doddir/dod/jp3_14.pdf). Assessed on August 17, 2011.

government...vigorously pursue the capabilities called for in the National Space Policy to ensure that the President will have the option to deploy weapons in space to deter threats to, and if necessary, defend against attacks on, US interests<sup>31</sup>." In its 2003 report, *Transformation Flight Plan*, the US Air Force lists a number of space weapon systems desirable in the event of a space war (*US Air Force Transformation Flight Plan*, 2003). These include;

- Space-based kinetic kill vehicles.
- Space-based lasers.
- Hypervelocity rod bundles.
- Space-based radio-frequency energy weapons.
- Space manoeuvre vehicles.
- Evolutionary air-and-space global laser engagement.

In August 2004, the US Air Force released the doctrine document *Counterspace Operations*, which defines space superiority as the "freedom to attack as well as the freedom from attack" in space. Counter-space operations include offensive and defensive counter-space measures. To preclude an adversary from exploring space to its advantage, offensive counter-space operations would attack, possibly preemptively, an adversary's space capability, including: satellites, space stations, or other spacecraft; communication links; ground stations; launch facilities; command, control, communication, computer, intelligence, surveillance, and reconnaissance systems; and space systems operated by third party providers. As the document indicates, these offensive operations would be conducted using a number of space weapon systems, such as ASATs that "include direct ascent and co-orbital systems that employ various mechanisms to affect or destroy an on-orbit spacecraft," and Directed Energy Weapons (DEWs), such as land-, sea-, air-, or space-based lasers. Professor Du Xiangwan, Vice President of the Chinese Academy of Engineering, claimed that the 2003 *Transformation Flight Plan* indicated that "many types of space-based weapons will be developed" and that "the tendency of space weaponisation

---

31. *Report of the Commission to Assess United States National Security Space Management and Organisation*, Washington, DC, January 11, 2001. Available at [http://space.au.af.mil/space\\_commission/](http://space.au.af.mil/space_commission/).

is obvious and serious"<sup>32</sup>. Ambassador Li Daoyu, President of the China Arms Control and Disarmament Association, recently stated, "As we cheer for every success of peaceful exploration and the use of outer space, we also hear the approaching bugling of war. The space military technology is advancing rapidly. New military and combat concepts and theories like 'control of space' and 'occupation of space' are emerging. Research and development programs of space weapons are in implementation. The danger of the weaponisation of, and an arms race in, outer space is ever more imminent"<sup>33</sup>. Moreover, the US has withdrawn from the 1972 Anti-Ballistic Missile (ABM) Treaty. Though not party to the treaty, China viewed it as a cornerstone of strategic stability and an important legal instrument for preventing the deployment of weapons in space.

## CONCLUSION

The question has more to do with how one analyses the Chinese regime than with anything specifically military. It hearkens back to complex debates among scholars of the history of Germany, which had also made massive attempts to achieve military leadership over the past little more than a century. Some German scholars explain her military build-ups, for example, that of her fleet in the years before World War I, as driven from outside. It was a matter of *Aussenpolitik*—foreign policy—above all, and could have been moderated, whether in the years before World War I or in the period leading up to World War II, by more forthcoming policies on the part of the then great powers. This argument contains truth and it applies, to a degree, to China, which has always regarded itself as the leading civilisation and polity in the world, and seeks to regain it. There is a great deal of Chinese military literature on questions of a general or even nuclear doctrine. But there is no access by foreigners to official documents that

---

32. Du Xiangwan, "Prevention Pollution in Space", presentation on at the *Symposium on the Sustainability of Space Resources & Technology*, Beijing, April 13-15, 2004.

33. Li Daoyu, "Prevention of the Weaponisation of and an Arms Race in Outer Space: An Urgent Task with No Time to Delay," statement at the UN Institute for Disarmament Research conference on Safeguarding Space Security: Prevention of an Arms Race in Outer Space," Council Chamber, Palais des Nations, Geneva, March 21, 2005. Available at <http://www.mfa.gov.cn/eng/wjb/zjg/jks/kjfywj/t189569.htm>.

provide definitive explanations or outline future doctrine or equipment choices. So analysts must devise their best guesstimates based on literature, official statements, actions, interview data, and assessment of modernisation decisions<sup>34</sup>.

China's military doctrine reflects the periodic changes in China's threat perception, technological capability and economic development. There is no official Chinese declaration of its strategic doctrine, except a declared NFU policy. While China views nuclear weapons and ballistic missiles as the currency of power necessary for preserving China's autonomy and protecting China's territorial integrity, it fears that US led weaponisation of space, in the absence of a negotiated space treaty, will alter its doctrine and put in motion doctrinal alterations. It is likely that an increase in the number of missiles, improvements in their ability to penetrate BMD systems, and a larger and more sophisticated submarine-based deterrent are all the possible directions for the future. The ASAT test in January 2007 was a visible demonstration of Chinese intent, capability and determination to counter efforts by other countries to dominate the emerging strategic frontier in "space".

**China's military doctrine reflects the periodic changes in China's threat perception, technological capability and economic development.**

---

34. Fisher D. Richard Jr, *China's Military Modernisation: Building for Regional and Global Reach* (US: Praeger Security International, 2008), p.7.



# THE RISE OF CHINA AND SOUTH KOREA'S STRATEGIC FLEXIBILITY

YEON JUNG JI

South Korea is often described as a paradigmatic case of behaviour, in that it is neither balancing nor bandwagoning.<sup>1</sup> While it is generally believed that small states tend to bandwagon the superpowers to gain strategic advantage, South Korea, aiming at political stability in East Asia, seems to identify an adversarial situation mainly with North Korea. It is known that both Koreas crave to balance their respective positions with China's rise, and that may drive various issues, however, the situation in the peninsula is kept stabilised. In this light, the issues in Seoul are whether, how, and to what extent, China can be a responsible participant in the Korean peninsula. How South Korea views China's power impacting on the peninsula and how South Korea's policy towards its neighbours affects the regional political dynamics has a bearing on China's rise.

Generally, the focus in discussing the interaction of China's neighbours with Beijing is whether each of them is repeating a historical pattern. One of the basic assumptions rooted in history is that China's rise corresponds with its policy preferences for regional stability. Despite China's global approach and peaceful rise, its adjacent states are both optimistic and pessimistic regarding the connotations of China's engagement with them. If China were

---

\* Ms **Yeon Jung Ji** is a Visiting Fellow at the Centre for Air Power Studies, New Delhi.

1. David C. Kang, *China Rising: Peace, Power, and Order in East Asia* (New York: Columbia University Press, 2007); and "Between Balancing and Bandwagoning: South Korea's Response to China", *Journal of East Asian Studies*, 9, pp. 1-28.

**Is China's rise a threat or an opportunity? And in what ways? To what extent will Beijing's policy-making affect the international order?**

to continue its progress, will the regional order be replaced with a Sino-centric order: and if yes, in what manner? And how will it influence South Korea's policy options? If not, why not, and how will China's role be limited?

#### **DISPUTED PERSPECTIVES ON CHINA'S RISE**

Ever since China decided to transform itself into a market economy, its political and economic power has rapidly increased. The possible future consequences of this rise of China are a matter of great debate among commentators.<sup>2</sup> China's high growth rate under a Communist dispensation ruling a market economy is undoubtedly a unique phenomenon. Following the general logical correlation of power with wealth, China's rise is itself an independent variable that can impact many dependent variables.<sup>3</sup> The perception and logic of China's rise are closely linked to the perception and standards of individuals.<sup>4</sup> Some have asked about how hard or soft China's rising power is and the nature of the response it generates from others. Also, will the increase in its power and influence lead to stability or instability? Therefore, is China's rise a threat or an opportunity? And in what ways? To what extent will Beijing's policy-making affect the international order?

According to the realist school in international relations theory, which views hard power as a crucial measure for theoretical understanding, China's rise is a matter of how to distribute power in an anarchical world. A broadly realist analysis of China's rise is based on the following basic assumptions: (1) a state is the main actor in an anarchical world; (2) a state primarily looks for survival; and (3) a state is a rational actor, often described as a black box. Realist theories refer to the balance of power, power transition, and so on,

2. Joseph K. Clifton, "Disputed Theory and Security Policy: Responding to the 'Rise of China' ", CMC Senior Theses Paper 141, 2011. [http://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1164&context=cmc\\_theses](http://scholarship.claremont.edu/cgi/viewcontent.cgi?article=1164&context=cmc_theses)
3. Many scholars point out that a state's development is linked to its affluence, and its growing powers affect others; as such, China's rise has consistently focussed on international relations – how China impacts on regional actors as well as at the international level.
4. Richard Rosecrance, "Power and International Relations: The Rise of China and its Effects", *International Studies Perspectives*, 7, 2006, pp. 31-35.

to indicate how a state aspires for materialistic superiority, such as military power, to survive in the world.

The balance-of-power theory narrates the logic that each state wants the lion's share of the distribution of power to make for an optimal balance. Competition between states leads both to a tendency to break the balance and, at the same time, not to disturb the equilibrium.<sup>5</sup> If one state rises rapidly, like China, other major powers and regional powers are motivated to attempt to restrain that rising power through unilateral, bilateral or coercive action. The power transition theory speaks of the possibility of confrontation or war if a newly challenging state reduces the gap between itself and a superpower. Offensive realism, in particular, demonstrates the pessimistic aspect of China's rise – why a state only trails the shadow of power. To quote Mearsheimer, "A state's ultimate goal is to be the hegemon in the system",<sup>6</sup> but in his view, the cycle of hegemonic competition is destined to be a tragedy, as neither international nor regional hegemony allows for the possibility of a peaceful balance of power. All realist theories conclude that China's growing military capability will probably compel military confrontation, under suitable conditions.

Liberalism argues more optimistically, linking China's rise to deepening institutional interdependence, in which state actors are likely to engage vigorously. While realism assumes that states will endeavour for strategic victory over one another, neo-liberalism emphasises the social element in international relations. Specifically, neo-liberalism posits a couple of assumptions: (1) the institutional mechanism drives actors rationally and cooperatively; (2) it can, in addition, reduce unnecessary cost and bring about less uncertainty through transparent sharing of information. The historic rise of diplomacy has seen states recede from mutual disagreement, basing themselves on rules, norms or other identifiable mediums.

On the possibility of conflict arising between China and others, this theory mostly depends upon the function of multilateralism. In this regard,

---

5. Yuan-Kang Wang, "Offensive Realism and the Rise of China", *Issues & Studies*, 40(1), 2004, pp. 173-201.

6. Clifton, n. 2, p. 17.

**The rise of China is anchored in its strengthening economic power and the concept of connection with others being a beneficial interaction.**

the rise of China is anchored in its strengthening economic power and the concept of connection with others being a beneficial interaction. The liberalists refute the possibility of war and confrontation: war is not likely to break out, even if a number of conditions may exist in that direction, because (1) a state attempts to calculate the cost of war compared with the benefits of cooperation or benevolent neutrality through security agreements, and so on; (2) with the calculation of risk and benefits, state actors would be interested in being competitive and cooperative within an institutional framework.<sup>7</sup>

Proponents of this perspective point out the following regarding China. (1) It is participating in international non-proliferation and disarmament. (2) It is discussing energy, the environment, and other international issues in the global forum. (3) It is engaging with regional issues through multilateral channels like the ASEAN Regional Forum (ARF) and the Shanghai Cooperation Organisation (SCO).<sup>8</sup> However, sceptics point out that China's engagement is not for peaceful purposes, but for the grand strategy of development, which needs comfort from external threats to maximise national security. The liberalists stress that while realism predicts that the Sino-American rivalry will imitate the Cold War rivalry of yesteryears, the fact that China is the United States' largest trading partner belies the prospect of that old rivalry between the superpowers. Economic interdependence will diminish interest in conflict, given that states calculate that cooperation is more beneficial.

**THE ARGUMENTS APPLIED TO SOUTH KOREA**

According to the traditional realist perspective, South Korea should be in trepidation of China's growing international presence.<sup>9</sup> Mearsheimer (2005)

---

7. Ibid., p. 53.

8. David Shambaugh, "China Engages Asia: Reshaping the Regional Order", *International Security*, 29(3), 2004/2005, p. 70.

9. Kang, n. 1.

strongly doubts the possibility of China having a peaceful rise, reflecting the realist perspective on China's emerging presence, stating, "Most of China's neighbours, including India, Japan, Singapore, South Korea, Russia and Vietnam, will likely join with the United States to contain China's power."<sup>10</sup>

To go by this view, South Korea looks the most vulnerable country during the period of a power transition. Surrounding the Korean peninsula, China is close to the authoritarian North Korea, no matter that the bilateral relationship has fractured to some extent. North Korea itself is seen as a major threat to South Korea, owing to the hostile attitude of the former to the US-led alliance system.<sup>11</sup> At the same time, South Korea is not fully sharing its affiliation with Japan, another US ally in East Asia, due to its rivalry with that country in defence affairs. This situation so distorts the image of South Korea that Seoul has to be dependent on the West only in all its national affairs, which is partially true.

Throughout history, the Korean peninsula has been a field of military confrontation between the rivals in the power transition period. In geopolitics, Korea is located in a key position that touches all powers. Therefore, any state desirous of moving forward to other countries had to pass through this area in the past. In the current period, going by the realist theory, conditions are ripe for war in the Korean peninsula.

According to Hong-seo Park, China's military engagement in the Korean peninsula is similar to the situations in the past, such as in the power transition period confronting the two superpowers. In 1592, China's Ming dynasty decided to deploy its military force against Japanese expansion in the belief that it might hamper China's influence in the Korean peninsula. A similar political assessment was shown by China during the Korea War,

**To go by this view, South Korea looks the most vulnerable country during the period of a power transition.**

---

10. Ibid., p. 3.

11. The Korean peninsula is understood to be located on a regional strategic triangle: "Northern Continental Triangle" (North Korea-China-Russia) versus "Southern Maritime Triangle" (South Korea-US-Japan). See Young Whan Kihl, "Security on the Korean Peninsula: Continuity and Change", *Security Dialogue*, 33(1), 2002, pp. 59-72.

when the US-USSR confrontation was considered to bring about regional instability, minimising China's prospects in dealing with Korea. China, it has been seen historically, has a tendency to respond with military engagement immediately, where a power rivalry exists in military formation. However, to gain a more objective viewpoint, China's deep engagement as a historical pattern needs to be analysed more systematically.<sup>12</sup>

While some argue that China "remains a generation or more behind the US in military technology",<sup>13</sup> it is racing to catch up. Perhaps, China's growing military power will be more visible in the Korean peninsula, reflecting an advanced military ground force, depending on the situation.<sup>14</sup> China's People's Liberation Army (PLA) is likely to turn more professional and well trained by priority funding for training, military infrastructure, modernised equipment and weapons. This speaks for a move towards a Sino-centric order in the region. An enhanced Chinese military force would enable the country to engage in a high-intensity modern conflict in the Korean peninsula. As Lonnie Henley points out, China's military expansion "adds great risks and costs for potential opponents" among China's neighbouring countries.<sup>15</sup>

On the other hand, South Korea and China seem to remain only in a cold relationship regarding military affairs.<sup>16</sup> Whereas South Korea maintains a strong alliance with the US, it is not completely excluding China's geopolitical engagement in the Korean peninsula.<sup>17</sup> Seoul has also attempted to get closer to China comprehensively over the last three decades. As the neo-liberalists argue, South Korea realises that China's rapid economic growth

---

12. Hong-seo Park, (박홍서). 신현실주의 이론을 통한 중국의 대한반도 군사개입 연구, 한국정치학회보, 32권 1호, 2006, p. 183.

13. Koch, ed., "China's Rising Military Power and What We Should Do about It", *Huffingtonpost*, January 12, 2011, [http://www.huffingtonpost.com/ed-koch/chinas-rising-military-po\\_b\\_807841.html](http://www.huffingtonpost.com/ed-koch/chinas-rising-military-po_b_807841.html)

14. Robert S. Ross, "The Rise of Chinese Power and the Implications for the Regional Security Order", *Orbis* 54(4), 2002, pp. 525-545.

15. Lonnie Henley, "PLA Logistics and Doctrine Reform, 1999-2009," in Susan M. Puska, ed., *The People's Liberation Army After Next* (Carlisle, PA: Strategic Studies Institute, U.S. Army War College, 2000), pp. 72-73.

16. Dick K. Nanto and Emma Chanlett-Avery, "The Effect of the Rise of China on Taiwan, Japan, and South Korea", *Problem of Post-Communism*, 55(1), January/February, 2006, p. 42.

17. Kang, n. 1.

can diminish South Korea's security fears, if China boosts institutionalism constructively. South Korea, as well as other Asian countries, are seen to accommodate strong economic ties with China as a means, among other things, to stabilise East Asia.

In the 2000s, China became a dominant market for South Korean exports and Foreign Direct Investment (FDI). Earlier, South Korea for the most part relied on the US market. In 2002, the China-Hong Kong combined market was recorded as South Korea's largest export market in the period after World War II.<sup>18</sup> From 2006 to 2009, South Korea's exports to this market were evaluated to be over twice the value of its exports to the US.<sup>19</sup> China's economic development is considered to be creating a regional economic sphere.<sup>20</sup> Boosting economic interests probably does not reduce the gap in political interests, but as its relationship with China deepens, South Korea seeks ways to reshape the conventional concept of the China threat.<sup>21</sup>

**Whereas South Korea maintains a strong alliance with the US, it is not completely excluding China's geo-political engagement in the Korean peninsula.**

## **SOUTH KOREA'S POLITICAL ELASTICITY BETWEEN THE US AND CHINA**

While many disputes continue between China and several of its neighbours, South Korea has manoeuvred and hedged its variations through multifaceted political difficulties to keep its national interests as free from uncertainty as possible, amidst China's so-called charm offensive.<sup>22</sup> Given the overall impression of China's rise, South Korea faces a complicated future, depending on whether China turns into a responsible stakeholder in the region.<sup>23</sup>

---

18. Ross, n. 14.

19. Ibid.

20. Nanto and Chanlett-Avery, n. 16, p. 35.

21. Kang, n. 1, p. 4.

22. Robert G. Sutter, *China's Rise in Asia-Promises, Prospects, and Implications for the United States*, Occasional Paper, 2005, Asia-Pacific Centre for Security Studies, p. 8. See also Shambaugh, n. 8, p. 67.

23. Jae Ho Chung, "The History War and Beyond", *Asian Survey*, 49(3), 2009, p. 468.

Noticeably, South Korea is eager to establish a well-planned and well-implemented unification plan with North Korea, while China weighs to prevent North Korea from collapsing by priority.<sup>24</sup> It is the momentous divergent policy preference between Seoul and Beijing that obliges South Korea to be strategically flexible. Though there is no fixed timetable for unification, it is foreseeable that Seoul will consistently attempt to accommodate peace-making, both for reasons of stability in the Korean peninsula and to allow the process of unification. The uncertain geo-political transformation in Korea has significant strategic implications for China's approach in East Asia.

One hurdle to Seoul's policy options vis-à-vis Pyongyang are the longstanding Beijing-Pyongyang relations, which have an underpinning of historical and geo-political needs. The relationship has not always been cordial: it has a disputed narration, yet it cannot emerge to the surface due to the US-South Korea alliance. The China-North Korea relationship is often described as being "one largely in name only".<sup>25</sup> However, despite friction, the two countries share a strategic interest that includes a wide range of cooperation against the US-South Korea alliance, excluding humanitarian aid. For example, South Korea is aware that the China-North Korea Defence Treaty signed in 1961 is particularly against the US alliance. In view of that, China's engagement with North Korea narrows down South Korea's policy options, confining Seoul's options vis-à-vis China to non-military issues.

Although the Asian regional order has undergone major changes in the last two decades, US presence in East Asia continues to be a problem for China. Whilst in the Chinese observation, to some extent, the US has been

---

24. There are differing opinions on whether China's foreign policy is favourable to Korea's unification or not and in what manner. See, for the opinion that China does not want the unification, Michael Raska, "Predictable Uncertainty: China's Rise and U.S.-Korea Security Dilemmas", *global-is-asian*, Lee Kuan Yew School of Public Policy, April-June 2011. On the other hand, some say China advocates Korea's unification under the certain condition that US military forces are withdrawn from the region to ensure regional stability. See You Ji, "China and North Korea: a Fragile Relationship of Strategic Convenience", *Journal of Contemporary China* 10(28), 2001, pp. 387-398.

25. You Ji, *Ibid.*, p. 390.

able to stabilise and reassure its alliance and preserve its hegemony,<sup>26</sup> China's strategic concern about competition with the US is that Chinese strategic thinkers mainly stick to the realist approach. After the events of September 11, 2001, the US launched a series of anti-terror policies to preserve its dominance of democratic international leadership. In the competition for influence in the regional order in East Asia, the Korean peninsula is pivotal to the United States' East Asia strategy, especially dealing with North Korea, clashing with China's interest in achieving a leading role in the region. One of China's concerns is that the US-South Korea Mutual Defence Treaty, signed in 1953, is intended for military cooperation against North Korea and China. Also, the US has revamped its policy regarding Seoul to avail for South Korea the same level of access to weaponry as that provided to NATO (North Atlantic Treaty Organisation) countries, Japan, Australia and New Zealand.

**Seoul is yet to conclude its predetermined views on how to accommodate its national interest against the background of China's rise.**

Interestingly, Seoul is yet to conclude its predetermined views on how to accommodate its national interest against the background of China's rise. Some say that it must be fully engaged with Beijing.<sup>27</sup> However, South Korea's diplomatic approach is fundamentally aimed at avoiding a military clash with the bordering countries, and maintaining strategic flexibility. For example, Seoul arrived at a rapprochement with China during the Cold War rivalry in the 1970s.

During the 1990s, while seeking wider strategic options, South Korea did not assert that China was posing a potential threat.<sup>28</sup> The economic dimension of relations between South Korea and China has been more accentuated officially. Consequently, *South Korea seems to put more value on how crucial China's presence is, rather than how argumentative China's emerging power is.*<sup>29</sup> China is in reality an unavoidable partner for South Korea in

---

26. Russell Ong, "South Korea and China's Security Objectives in East Asia", *Asia-Pacific Review*, 15(2), 2008, p. 104.

27. Scott Snyder, *China's Rise and the Two Koreas: Politics, Economics, Security* (Boulder, CO: Lynn Rienner, 2009).

28. Chung, n. 23, pp. 468-483.

29. Kang, n.1.

developing its economic strategy and managing regional issues linked to North Korea.

China's approach towards East Asia has unequivocally improved steadily and it has become more interactive through high-level diplomacy. Vis-à-vis South Korea, Chinese leaders are clear about two things: maximising economic interest, separated from political disputes with neighbouring countries; and stabilising regional issues in East Asia to secure China's military and economic power. Since all the regional players are present in Asian multilateralism, using as a tool the regional apparatus, China's involvement and leadership is seen to coexist with the US and its allies. China's engagement in the regional order is on the basis of an institutional framework that may be functional in constraining US influence in the region.<sup>30</sup> Considering the basic elements of China's foreign policy, Seoul's approach to China is aimed at widening relations beyond bilateralism. As the Chinese government also places importance upon improving its position in East Asia, South Korea and China have elevated their "comprehensive cooperative partnership" to a "security cooperative partnership" in 2008.<sup>31</sup>

### **SOUTH KOREA'S PATHWAY TO SHARE THE LOAD**

Professor Chung-min Lee, Dean of the School in Yonsei University in South Korea, has noted: "While China's continuing economic growth trajectory has amplified regional cooperation based on trade, ... China's geopolitical and strategic position, coupled with its military modernization has progressively posed higher threshold dilemmas for Asia as well as the international system."<sup>32</sup> South Korea needs to ascertain how to coexist with the sole superpower and other rising powers.

#### ***US-South Korea Alliance***

South Korea regards the US, its strategic ally, as a pillar of defence in its present policy. The US presence and strategy during the Cold War depended upon hard power against the Soviet Union and it was widely comprehended

30. Shambaugh, n. 8, p. 73.

31. Ong, n. 26, pp. 102-103.

32. Raska, n. 24, p. 24.

in regional and global terms.<sup>33</sup> Recently, responding to China's growing military force, the US is redesigning its regional policy regarding changes to regional polarity, operational concepts, and weapon procurement and deployment in case of emergencies. South Korea perhaps does not have many options to break through the current stand-off with North Korea as well as overcoming other regional issues owing to the strategic ambiguity and uncertain future security scenario. Currently, South Korea is forced to have enmity with North Korea; this causes a dilemma that the China-North Korea ties call for withdrawal of US military presence in South Korea first.<sup>34</sup>

**Many expected the US-South Korea alliance to be strengthened in the post-Cold War period, which, however, has not happened.**

The US-South Korea alliance is supposed to be more extensive against an external threat. Many expected the US-South Korea alliance to be strengthened in the post-Cold War period, which, however, has not happened. Some socio-political changes in South Korea also suggest a changed outlook on issues such as the conventional framework of alliance in the Korean peninsula. Since the 1990s, public opinion has started to favour the normalisation of relationship with the North, based on the ideological transformation, though most agree on no mutation of the alliance structure. Consequently, when dealing with Pyongyang, Seoul does not always respond favourably to the United States' hawkish gestures, for instance, considering a preemptive military strike targeting North Korea's nuclear facilities owing to the strategic deliberation of mass retaliation. Soon after North Korea withdrew from the Nuclear Non-Proliferation Treaty (NPT) in 1993, the Clinton Administration initiated steps of conciliation, with Pyongyang weighing the military option, that caused strong opposition in South Korea. In the Bush Administration, the military option was seriously considered to lead to the collapse of the Kim Jung-il regime and strengthen the United States' position in the region, which was vastly disparate from

---

33. Ibid., p. 25.

34. Ji, n. 24, p. 396.

the policy of the government in Seoul. In response, South Korea carried out a more independent policy toward North Korea, which further separated the bargaining issues between the US and North Korea. In 1998, President Kim Dae Jung of South Korea initiated a new phase in the inter-Korean relationship by declaring unprecedented assistance to North Korea.

Due to the differences in policy approaches between the US and South Korea, the conservatives in the US perceived South Korea as a hurdle to resolving the North Korean crisis.<sup>35</sup> When dealing with Pyongyang, Seoul consistently paid the price to stabilise the situation, to ensure that a war would not ensue in the region. In 2006, the South Korean President officially complained about the United States' strategic approach, which was arrived at without South Korea's political accord. South Korea stated that there would be deep disagreement between Seoul and Washington if the latter tried a military option against Pyongyang.<sup>36</sup>

However, this does not imply that the momentum in the US-South Korea alliance has been lost. Washington and Seoul still broadly have a consensual outlook about the threat emanating from Pyongyang's diplomacy and domestic instability. Neither government wants an abrupt collapse of the Kim Jung-il regime, not only for its national and regional stakes but also for China's engagement in this region. From outside, North Korea is too volatile and unhinged a regime to be able to loosen the US-South Korea alliance system. Yet, there is a difference in how the US and South Korea perceive North Korea: according to US opinion, South Korea is seen to be emotionally attached to resolving the political issues with North Korea.<sup>37</sup>

At the same time, Seoul is cautious about China's military appearance in the North Korean context. In January 2011, the Korean news media reported China's military presence in North Korea's Rajin-Sonbong Special Economic

---

35. Hyun-Wook Kim, "Domestic Events, Ideological Changes and the post-Cold War US-South Korea Alliance", *Australian Journal of International Affairs*, 63(4), 2009, p. 483.

36. *Ibid.*

37. Junwung Kim, "Ambivalent Allies: Recent South Korean Perceptions of the United States Forces Korea (USFK)", *Asian Affairs*, 30(4), 2004, p. 279.

Zone (SEZ).<sup>38</sup> Earlier, China and North Korea signed an investment pact to build new roads and a port in the SEZ. China's military presence in the region could be either to suppress rebellious public opinion and avert a sudden collapse of the regime or to support the creation of the SEZ, which establishes a new infrastructure from Rajin-Sonbong to Quanhe in Jilin, China.<sup>39</sup> No matter what the actual reason, Seoul reckoned that China would support Pyongyang's decisions.

**In part, to enable enhanced balancing, South Korea is looking for partnerships beyond its immediate neighbours.**

With all possible scenarios surrounding the region, Seoul preserves a defensive military posture. It can neither be fully against Washington's decisions nor completely supportive of them.<sup>40</sup> In the meantime, Seoul needs to calculate that reinforcing the US military force in the Korean peninsula may cause an arms race, encompassing China's military presence in North Korea. Domestically, South Korea needs to reconsider how to update an old-fashioned alliance relationship in the light of what the politicians and the public suggest. Overall, South Korea certainly faces a challenging phase in reducing the escalation of political and diplomatic peril in its territory.

### *India-South Korea Ties*

In part, to enable enhanced balancing, South Korea is looking for partnerships beyond its immediate neighbours. The India-South Korea tie is more or less on the right track to face the challenge posed to both countries by the rise of China.<sup>41</sup> It also seems to be linked to the relative decline of US presence in East Asia.<sup>42</sup> The two regional powers share the concern of whether China's presence and rising stature will translate into its being a

---

38. "Chinese Troops Stationed in N. Korean Special Zone", *Chosunilbo*, 17 January 2011; [http://english.chosun.com/site/data/html\\_dir/2011/01/17/2011011700465.html](http://english.chosun.com/site/data/html_dir/2011/01/17/2011011700465.html)

39. Ibid.

40. Doug Bandow, "The US-South Korea Alliance: Outdated, Unnecessary, and Dangerous", *Foreign Policy Briefing*, No. 90, 14 July 2010, p. 3.

41. Sujit Dutta, "Managing and Engaging Rising China: India's Evolving Posture", *The Washington Quarterly*, 34(2), 2011, p. 139.

42. Rajaram Panda, "India-Republic of Korea Military Diplomacy: Past and Future Projections", *Journal of Defense Studies*, 5(1), 2011, pp. 16-38.

dependable stakeholder in respect of the possibility of a “realignment of power relations in Asia”.<sup>43</sup> Both countries need their capabilities to balance the regional order in terms of economic development, expanding diplomacy and shaping regional institutions. The current link between South Korea and India involves a series of communications with reference to economic ties, defence cooperation and a civil nuclear deal. This affiliation is predicted to evolve and become established in protecting increased strategic convergence across Asia.<sup>44</sup>

It has been pointed out that the Soviet Union advised India and South Korea to have close bilateral ties in the light of the prospect of China's emergence during the Cold War.<sup>45</sup> In monitoring the relationships among China, South Korea and Japan, Moscow endeavoured to have India build up a friendly stance towards South Korea; but this did not come about.<sup>46</sup> For a long time, India refrained from engaging in other regional issues, and maintained its image as a Third World country. But currently, South Korea is interested in expanding its relationship with India, and India is looking for greater East Asian contacts in the pursuit of its own Look East policy. Initially, New Delhi did not carry much weight with South Korea compared to other regional powers due to her domestic and regional political convulsion, however, India currently counts for a great deal in Seoul's outlook, given their bilateral economic ties, India's fast-growing economy, and the prediction that India will become an economic world leader in the medium term. The India-South Korea relationship, elevated to the level of a strategic partnership, has evolved rapidly due to the necessity to maintain the balance of power in the Asia-Pacific region.

In view of the power shift in Asia, what really counts in this relationship is the convergence of security interests. In the 2000s, South Korea was eager to build up a cordial relationship with India, and India responded positively.

---

43. *Ibid.*, p. 17.

44. Harsh V. Pant, “China's Rise Adds Urgency to India-South Korea Ties”, *World Politics Review*, 2010, <http://www.worldpoliticsreview.com/articles/6340/chinas-rise-adds-urgency-to-india-south-korea-ties>

45. Panda, n. 42, p. 20.

46. Man-Woo Lee, “The Prospects for Normalization of Relations between Moscow and Seoul”, *Korea and World Affairs*, 4(1), Spring, 2002, p. 189.

In 2005, the two countries signed a Memorandum of Understanding (MoU) on defence, industry and logistics, which was followed in 2006 by another MoU in the area of naval cooperation to guard the Indian Ocean and the Gulf of Aden for energy security reasons and against piracy. In 2010, their bilateral military cooperation was demonstrated at an event presided over by Indian Defence Minister A.K. Antony, during a visit to South Korea.

A civil nuclear deal to balance the entire nuclear enigma in South Asia and East Asia is also gaining thrust. North Korea and Pakistan, the two old foes of South Korea and India, respectively, have been trying to establish a tactical linkage with China in the nuclear and missile domain. Formulated by the A.Q. Khan network, the North Korea-Pakistan relationship is aimed at sharing nuclear and missile science and technology, nuclear materials, and intelligence advice. According to an Indian expert, Rajaram Panda, China follows similar schemes against India, South Korea and Japan, to confine them to their own influential territorial space and to balance them by encouraging friendly cooperation with other countries in the region, comparable to the “containment strategy” used by the Soviet Union during the Cold War.<sup>47</sup> The present relationship between India and Korea, built on strategic convergence, is now in a new phase of balance of power.

While this cooperation needs to be valued separately from the US-South Korea alliance, the growing strategic cooperation between New Delhi and Seoul coincides with the rise of China. It would, however, be premature to overemphasise the military and security aspect of this strategic cooperation.

## CONCLUSION

South Korea's foreign policy reflects the accommodation of a peaceful power shift. Throughout history, South Korea has been pointed to as an example of a realist in pessimism. Though this logic still seems to prevail, currently South Korea is a clear case of a country associated with China's rise in power in East Asia.

---

47. Panda, n. 42, pp. 16-38.

**Seoul's policy toward China is an attempt to separate political issues and economic interdependence.**

Seoul's policy toward China is an attempt to separate political issues and economic interdependence. South Korea's diplomatic manoeuvres suggest hedging policy options since Seoul does not want merely to adopt either bandwagoning or balancing strategies as regards neighbouring countries. A political confrontation between the US and China or China's dominant role in the Korean peninsula would suggest for South Korea an opportunity for a fine balance in the peninsula since the North Korean issue is extremely volatile. The US-China-South Korea strategic triangle has played a critical role in suppressing North Korea's assertiveness within a multilateral framework.

On one side, Seoul calculates that a strong China might be helpful to stabilise the region. South Korea does not, therefore, want to fix the role of China as a threat to reshaping the regional order, if it is helpful in stabilising North Korea's hostile attitude. On the other hand, the rise of China tends to minimise the diplomatic space available for South Korea to deal with the US and North Korea. China, with its massive demography and territory, may push Seoul to deal with their other disputed issues, while Seoul distinguishes its economic ties with China from disputed political issues.

Meanwhile, South Korea is concerned about the unification of the two Koreas and the prevention of North Korea's collapse, which will trigger political and economic turmoil in the peninsula. In this context, China's increasing economic and military influence in North Korea is keenly observed for its helpful or damaging potential to South Korea's long-term interests.

In exploring solutions, South Korea accepts US leadership in East Asia but is widening its strategic scope to seek a stable partner like India. Fortunately, the two countries have a great commonality in their national interests.

Despite the various views on China's rise and South Korea's path, it still seems significant for South Korea to strengthen its cordial relationship with China in this transition period. It would reduce the pessimistic foretelling of Seoul's strategies. At the same time, given the uncertainty entailed in the transition period of China's rise, it will be beneficial for Seoul to strengthen its cordial relationship with both the US and India.

**FORM IV (SEE RULE 8)**

*Statement about ownership and other particulars about newspaper (Air Power\* to be published in the first issue every year after the last day of February .*

- |  |  |
|--|--|
| 1. Place of Publication  | <b>New Delhi</b>   |
| 2. Periodicity of its publication  | <b>Quarterly</b>   |
| 3. Printer's Name  | <b>Air Commodore Jasjit Singh (Retd)</b>   |
| Nationality  | <b>Indian</b>  |
| (a) Whether a citizen of India?  | <b>Yes</b>   |
| (b) If a foreigner, the country of origin Address  | <b>Not Applicable</b><br><b>P-284, Arjan Path, Subroto Park, New Delhi 110010</b>                      |
| 4. Publisher's Name  | <b>Air Commodore Jasjit Singh (Retd)</b>   |
| Nationality  | <b>Indian</b>  |
| (a) Whether a citizen of India?  | <b>Yes</b>   |
| (b) If a foreigner, the country of origin Address  | <b>Not Applicable</b><br><b>P-284, Arjan Path, Subroto Park, New Delhi 110010</b>                      |
| 5. Editor's Name   | <b>Air Commodore Jasjit Singh (Retd)</b>   |
| Nationality  | <b>Indian</b>  |
| (a) Whether a citizen of India?  | <b>Yes</b>   |
| (b) If a foreigner, the country of origin Address  | <b>Not Applicable</b><br><b>P-284, Arjan Path, Subroto Park, New Delhi 110010</b>                      |
| 6. Names and addresses of individuals who own (Trust) the newspaper and partners or shareholders holding more than one per cent of the total capital | <b>Forum for National Security Studies</b><br><b>P-284, Arjan Path, Subroto Park, New Delhi 110010</b> |

I, **Jasjit Singh**, hereby declare that the particulars give above are true to the best of my knowledge and belief.

Date: **March 2010**  
\* Journal

**Sd/- Jasjit Singh**  
Signature of Publisher

---

## RESEARCH FELLOWSHIPS – 2011-2013

Centre for Air Power Studies, New Delhi, invites applications from Indian citizens for research fellowships to undertake a 2-year study on Indian defence and aerospace issues, including China's military modernisation and Pakistan's military, at three levels:

- (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; and
- (iii) **Associate Fellow** with minimum 3 years experience in research or 5 years experience in defence. Remuneration according to experience and expertise (within the scales of Rs. 14,300-450-22,400; 12,000-375-18,000 and 8,000-275-13,500 respectively).

Applications along with a Project Proposal of not more than 1,500 words must be sent to **Director, Centre for Air Power Studies, P-284, Arjan Path, Subroto Park, New Delhi-110 010** not later than **March 31, 2012**, by post or Email to [diroffice@aerospaceindia.org](mailto:diroffice@aerospaceindia.org) complete with the bio-data giving full details.



---

# 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 110010

---



# *AIR POWER*

Journal of Air Power and Space Studies

Centre for Air Power Studies, P-284, Arjan Path, Subroto Park, New Delhi 110010



**SUBSCRIPTION FORM**

**In India**

- Rs. 275/- per copy
- Rs. 1100/- per annum (4 Issues)

**Overseas**

- US \$ 35 per copy
- US \$ 130 per annum (4 Issues)

PLEASE PRINT

Name.....

Complete Address.....

.....

.....

.....Pin ..... Phone.....

Please find enclosed cheque/draft number: ..... dated.....drawn on..... favouring KW Publishers Pvt. Ltd., for Rs US\$.....

Please mail this form to: KW Publishers Pvt. Ltd., 4676/21, Ansari Road, Daryaganj New Delhi 110 002 T: +91.11.23263498 / 43528107 E: mail@kwpub.in / knowledgeworld@vsnl.net W: www.kwpub.com



**SUBSCRIPTION FORM**

**In India**

- Rs. 275/- per copy
- Rs. 1100/- per annum (4 Issues)

**Overseas**

- US \$ 35 per copy
- US \$ 130 per annum (4 Issues)

PLEASE PRINT

Name.....

Complete Address.....

.....

.....

.....Pin ..... Phone.....

Please find enclosed cheque/draft number: ..... dated.....drawn on..... favouring KW Publishers Pvt. Ltd., for Rs US\$.....

Please mail this form to: KW Publishers Pvt. Ltd., 4676/21, Ansari Road, Daryaganj New Delhi 110 002 T: +91.11.23263498 / 43528107 E: mail@kwpub.in / knowledgeworld@vsnl.net W: www.kwpub.com