China-India-Pakistan: Nuclear Command and Control in Southern Asia

by

Swaran Singh
Armies can signify but little, unless there is counsel and wise management at home.

– Cicero
Preface

The original outline of this monograph was inspired from Shaun Gregory’s Nuclear Command and Control in NATO that I had read in the wake of India’s nuclear tests in May 1998. However, my current interest in nuclear command and control goes back to late 2005 when I was asked to do a paper on the subject for a conference by the Delhi Policy Group that was to be held in the summer of 2006. This was followed by an invitation for a lecture on the subject by Islamabad-based Institute of Strategic Studies which brought in the comparative perspective. It was during this visit that I first met Ms Maria Sultan and came to know about South Asian Strategic Stability Unit at Bradford. I have since followed with interest its evolution, expansion as an institute and its research work and attachments of various eminent scholars from South Asia which have resulted in so many very useful papers. I see this monograph as part of their efforts to ensure strategic stability in South Asia by sharing information, expanding transparency as tool of confidence-building between countries that are normally debated but as nuclear adversaries and/or nuclear flashpoints.

First and foremost, I wish to thank Ms Maria Sultan, Director-General, and Dr Nick Robson, Program Officer, of the South Asian Strategic Stability Institute for making this monograph possible in its present shape and size. I must also acknowledge gratitude here to both Lt Gen V R Raghavan, Director of Delhi Policy Group (New Delhi) and Dr Shirin Mazari, former Director General of Institute of Strategic Studies, (Islamabad), for having facilitated my continued interest in issues of nuclear command and control. I have also greatly benefited from my interactions with several experts from and on China and Pakistan. Specifically, I wish to mention my gratitude to (Late) Prof Girideshingkar for his inspiring interest and objectivity in examining China’s defense system. Several scholars of my age owe this to him. Amongst my contemporaries, I owe thanks to Prof Tahir Amin and Prof Rifaat Hussain at Quaid-i-Azam University (Islamabad), to Prof Li Bin of Tsinghua University and Hu Shisheng of China Institute of Contemporary International Relations (CICIR) at Beijing and to Prof Shen Dingli and Prof Zhang Guihong of Fudan University (Shanghai) for our discussions and sharing notes on these issues.

Also, apart from libraries in Delhi, my field trip to London allowed me to use Library of International Institute of Strategic Studies (IISS) as also to interact with a whole range of scholar, especially those who attended my February 2009 lecture on the subject organized at the Verification, Research, Training and Information Center (Vertic) in London. I would like to specifically mention Rahul Roy-Chaudhury, Senior Fellow for South Asia at IISS, for his facilitation. Later my brief stay at the University of Hull during August 2009 also presented me an opportunity to discuss some of these issues with Prof Bhumitra Chakma and Prof Sumit Ganguly and I must record my thanks for their feedback on my paper there.

In the end, I must also thank my referee who may never be known to me yet made an important contribution in making me rethink and bring better balance in my views, especially about Pakistan’s nuclear doctrine as also on mutual equations amongst and comparative approach to the understanding of C2 of the three countries. I remain though solely responsible for all the errors and omissions that may have still escaped my eyes or my understanding.
# Acronyms

<table>
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<tr>
<th>Acronym</th>
<th>Description</th>
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<tbody>
<tr>
<td>AEC</td>
<td>Atomic Energy Commission</td>
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<tr>
<td>ATV</td>
<td>advanced technology vehicle</td>
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<tr>
<td>C²</td>
<td>Command and Control</td>
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<tr>
<td>C³I⁴SR</td>
<td>Command, Control, Communications, Computers, Information, Intelligence, Surveillance and Reconnaissance</td>
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<td>CBM</td>
<td>confidence building measures</td>
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<td>CDS</td>
<td>Chief of Defense Staff</td>
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<td>CJCSC</td>
<td>Chief of Joint Chiefs of Staff Committee</td>
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<td>CMC</td>
<td>Central Military Commission</td>
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<td>COSC</td>
<td>Chiefs of Staff Committee</td>
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<td>CPC</td>
<td>Communist Party of China</td>
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<td>DRDO</td>
<td>Defense Research and Development Organization</td>
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<td>ICBMs</td>
<td>Inter-Continental Ballistic Missiles</td>
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<td>JCSC</td>
<td>Joint Chiefs of Staff Committee</td>
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<td>MND</td>
<td>Ministry of National Defense</td>
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<td>NSA</td>
<td>National Security Advisor</td>
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<td>NSAB</td>
<td>National Security Advisory Board</td>
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<td>NWS</td>
<td>nuclear weapon state</td>
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<tr>
<td>PAEC</td>
<td>Pakistan Atomic Energy Commission</td>
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<td>PALs</td>
<td>permissive action links</td>
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<tr>
<td>PMO</td>
<td>Prime Minister’s Office</td>
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<tr>
<td>PRC</td>
<td>People’s Republic of China</td>
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<tr>
<td>SFC</td>
<td>Strategic Force Command</td>
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<tr>
<td>SLBM</td>
<td>Sea Launched Ballistic Missile</td>
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<td>SSN</td>
<td>nuclear powered submarine</td>
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Executive Summary

The nuclear triangle of ‘southern’ Asia – comprising China, India and Pakistan – presents a unique but threatening reality of 21st Century world. More recently, the threat from non-state actors, especially in case of Pakistan, has gripped international community thus expanding discourses scrutinizing the safety and security of their nuclear assets. Moreover, continuing diplomatic and military showdowns amongst these three states have not make matters any easier. This makes security analysts concerned about critical areas of their nuclear C2 which is expected to ensure their ‘restraint’ and effective yet proper threat assessment and response in case of an eventuality of any major crisis in this region. But, continuing confusion and ambiguity remain thereby further heightening regional and global concerns on the subject matter.

At the root of their problems lie continued mutual suspicions amongst ruling elites of China, India and Pakistan flowing from their historical experiences of boundary disputes, Cold War dynamics and resultant wars and tensions. Besides, the diversity of their political cultures and systems has only further exacerbated this gulf thus discouraging any coordination or cooperation in matters of national defense. The fact that all three have continued with smaller nuclear arsenals and lower-end technologies discouraged transparency and sharing of information. These smaller stockpiles also make them, in crisis time, vulnerable as tempting targets for decapitating first strike as their retaliatory capabilities for a second-strike remain in doubt.

Though all three have varying degrees of commitments to No-First-Use doctrine, these have been open to multiple interpretations and speculations. Especially, in case of Pakistan, while there have been several statements from the helm that Pakistan will not be the first to use nuclear weapons, the debate in favor of first-use of nuclear weapons has also continued to be equally convincing and robust.1 Besides, the security of Pakistan’s nuclear assets has been another issue in debate and strategic circles in the West have been exhorting for need of contingency plans to deal with a possible nuclear crisis in Pakistan.2 This combination of continued uncertainty as also dependence on western analysts does not augur well for the strategic stability of this region. Instead, it calls for making indigenous efforts like undertaking studies about their nuclear establishments for increasing their mutual understanding, trust and awareness on these matters.

No doubt loads of work has been done in direction of expanding the knowledge pool on nuclear equations in this region yet, the focus remains invariably on ‘glamorous’ overkill

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capacities of their nuclear weapons and on their arms race in perfecting their delivery systems. Little work has been done on examining their nuclear C^2 structures from the standpoint of ensuring regional strategic stability using C^2 as tools of ‘restraint’ and ‘efficacy’ in analyzing threats and for developing proper responses in their nuclear equations. Indeed, the nuclear equations of these three states may have important lessons for not only understanding the other ‘new’ nuclear powers like North Korea but also for Moscow and Washington that are working so hard to reduce their nuclear weapons stockpiles.

Finally, in case of China, India and Pakistan, even within their nuclear C^2, as the pace of development of their technologies, structures and regulations remains extremely piece-meal, this places the onus on the political apex of their C^2 establishments that comprises of their political-military-scientific-bureaucratic leaders and their dynamic equations. It is this critical component of their nuclear C^2 that the following pages of this monograph seek to examine.
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CHAPTER ONE: Introduction

Thanks to the continued unfolding of new military technologies – each making wars ever more destructive – the command and control (henceforth C2) segment of military establishments has become increasingly critical as also ever more complex specialized field of study in strategic circles. More specifically from the period of Industrial Revolution, and with laying of cables across ocean becoming a reality from 1890s, communication technologies gradually allowed commanders to lead from the rear and war cabinets in Europe were directing wars around the world. But then, with the advent of nuclear age in 1940s – which has only further obliterated traditional distinctions of war and peace, combatants and non-combatants, victory and defeat – War was to witness C2 returning to the very ‘center’ of an enormously expanded combat zone and forever becoming War’s most coveted target. As a result, nuclear C2 has come to be a preoccupation of both peacetime as well as wartime and this is especially so when it involves interactions amongst multiple neighboring nuclear adversaries like China, India and Pakistan.

Secondly, what makes C2 especially an issue of public debate is that from once being restricted to the frontiers and then to the rear of combat zone, War has since come home; affecting directly each and every member of human society. Information revolution and television have transformed War as a desk or drawing room activity where each one of us thrives in being passively active both as its critic as also its victim. The high destructive potential of nuclear weapons involves high stakes of every citizen thereby pushing for making their representatives, the political executive, not only integral but ultimate authority in C2 of all war-fighting. Therefore, the increased destructiveness of nuclear age not only places high premium on advanced, accurate, efficient and effective C2 technologies but also on their safety and survivability especially the safety and survivability of the political leadership that forms the apex of C2 in most countries.

Conversely, of course, the view is also held that there is nothing new about nuclear C2; that C2 have always been integral to not only all war-fighting but to human life in general. Is it not that even sheep-herding involves C2 responsibilities? A cursory glance at military history tells us that all war-fighting have always held ingenious of their commanders as pivotal. The difference, of course, is that the implications of less than perfect C2 have metamorphosed and this is what brings these issues today to the centerstage of strategic debates worldwide. And this is what makes C2 assets (personnel, information and materials) the most decisive component of all war-fighting machinery.

Especially, for ‘Southern’ Asia, with its minimalist approach to nuclear stockpiles and the resultant ever-present temptation for a ‘decapitating’ first strike, the backwardness of their C4ISR technologies, and lack of transparency, all make a robust C2 an essential prerequisite for their survival and security. In ‘Southern’ Asia, this complex reality is getting only further convoluted by the ever expanding threats from non-State actors that have added one more difficult dimension to their already so fragile nuclear equations.
It is in this evolving context that this monograph makes an attempt to examining the nuclear C² of China, India and Pakistan and to crystal gaze its potential in ensuring the strategic stability of this otherwise volatile reality.

What is Command & Control?

At the beginning of nuclear age, everything about C² was, of course, considered too sacred to question and nothing much on this subject was allowed to be published or debated in public. It is only from early 1980s that Americans began to debate the subject outside their close-door and select meetings of the military top-brass. Today the details on US National Command Authority and the succession lists of its political and military apex can be easily accessed online. Similarly, it is common knowledge today that Soviets had also set up their Defense Council, headed by Commander-in-Chief (General Secretary of the CPSU) soon after their nuclear detonation in 1949. The same C² set up has continued till date except that the supreme Commander-in-Chief is now the President of the Russian Federation. The C² in case of UK and France have also been working on similar lines, except that in case of UK, the Prime Minister remains circumscribed by UK’s commitments as member of North Atlantic Treaty Organization (NATO). The French nuclear forces, by comparison, remain under exclusive French control though President Sarkozy had once proposed to create a joint UK-French nuclear deterrent by sharing submarine patrols. However, the pictures, of what we mean by nuclear C², get murkier when it comes to smaller and less developed nuclear weapons countries like China, India and Pakistan.

As regards its academic definitions of C², the American literature has traditionally defined it in the following most simplified manner: “The ability to send order requires only one-way links from higher authority to the forces; this is command. The ability to receive feedback on an information channel is necessary for control.” Another well-known definition of C² describes it as “an arrangement of facilities, personnel, procedures and means of information, acquisition, processing, and disseminations used by a commander in planning, directing, and controlling military operations”. Yet another scholar describes it as ability “to assure high-level control of nuclear weapons, reduce to acceptable levels the risk of accidental, unauthorized or irrational use of nuclear weapons, and to assure the survivability of nuclear weapons to the degree necessary to undertake deterrence.” The US Department of Defense, which has possibly debated this concept to its hilt, defines C² as:

…the exercise of authority and direction by a purposely designated commander over assigned forces in the accomplishment of the mission. Command and Control functions are performed through an arrangement of personnel, equipment, communications, facilities and processes employed by a commander in planning, directing, coordinating, and controlling forces and operations in the accomplishment of the mission.

To evolve these conceptual paradigms into operational mechanism, C² involves (a) **hardware** which includes systems for communications, safety and related infrastructure and (b) **software** which includes procedures, instructions, data-banks and (c) **personnel** that connotes
both the decision-makers and support staff of experts. More specifically in the personnel segment, C\textsuperscript{2} at the political apex involves vision, planning, coordination, and grooming of a select group of leaders and help them in decision-making with regard to (a) threat assessment and (b) an effective response. The criticality of these decision-making structures at the apex lies in the fact that C\textsuperscript{2} has to ensure their proper use in decision-making, communications and assessment efficiently and yet within confines of predetermined norms and procedures. For the purpose of balancing efficiency with legitimacy of decision-making, the ultimate authority is normally vested with the political executive, normally so authorized by popularly elected representatives. At the same time, premium remains on streamlining the structures to enable them to take effective and timely decision by outlining operational aims based on accurate and fast analysis of information available and to decide the course of action for their subordinates, and then to oversee implementation of their orders.

To put it at the very outset, this monograph relates only to this specific component of the nuclear C\textsuperscript{2}, i.e., the hierarchical political apex of decision-makers and their interface with respective scientific-military-bureaucratic leaders and other strategic experts. Given the relatively small and rudimentary nature of their nuclear arsenals (both weapons systems and C\textsuperscript{4}ISR technologies) in Southern Asia, the onus for ensuring deterrence stability in peacetime and escalation control in wartime hinges especially on the wisdom of their political leaders. And this makes studying the political apex of their nuclear C\textsuperscript{2} absolutely critical for ensuring the strategic stability in Southern Asia. And, from this limited perspective, the scope of this monograph involves examining the vital functions of ‘authority’ and ‘direction’ of armed forces and other scientific and bureaucratic elite to ensure efficacy of nuclear deterrence and then economy of force and escalation control in case actual use of weapons becomes inevitable.

**Why we need Command & Control?**

At the broader level, arguments continue to be made as to whether C\textsuperscript{2} has not been in place right from the very beginning of War, or, in this case, from the very inception of nuclear policies? Or has C\textsuperscript{2} not evolved enough to be able to ensure their survival in the nuclear context. Or have not War stayed as fully legitimate and a socially relevant institution in the nuclear age? Security analysts, on the other hand, continue to caution how strategic assessments on war-fighting in the nuclear age remain too enamored with overkill capacities of nuclear weapons and the invincibility of their delivery systems; especially with issues like the circular error probability (CEP) of intercontinental ballistic missiles. As a result, their deliberations only rarely focus on issues of ‘C\textsuperscript{2}’ as something of critical significance in bringing life and direction to all those highly destructive and expensive technologies.

Secondly, in addition to maximizing the potential of nuclear assets, nuclear C\textsuperscript{2} is required to ensure an effective civilian/political control on nuclear forces. This justification for C\textsuperscript{2} has been particularly emphasized in the backdrop of nuclear weapon and their delivery systems’ exponentially enhanced destructive power. This makes them too powerful thus necessitating effective political control and supervision over armed forces. Thirdly, nuclear weapons have also been
described as political weapons privileging their political rather than military usages which puts high premium on ‘restraint’ that relies on a robust C^2 paradigm. Fourthly, C^2 seeks to put in place measures to avoid possibilities of accidental, unauthorized use of nuclear assets, and especially any miscalculated decapitating strikes. And finally, C^2 seeks to provide early assessment about imminent threats like incoming missiles which may not be nuclear tipped but may hit nuclear assets of the host country. Together, it helps in decision-making on threat-assessment and on effective response to threats and challenges all aimed at ensuring strategic stability and peace.

In the longer run, therefore, the significance of C^2 also remains in its ensuring trustworthiness in peacetime and its speed, ease of operations and combat stability in time of crisis or war. So much so that experts starting from Thomas C Schelling from his 1966 book _Arms and Influence_ have often privileged C^2 over nuclear weapons and their delivery systems as the ultimate tool of ensuring deterrence credibility and peace amongst nuclear weapons countries. Others believe C^2 to be most coveted target that must be capable of survival under attack as are the forces it is required to direct. Experts cite several reasons why C^2 is treated as the most critical component of the credibility of nuclear deterrence as also the most reliable guarantor of strategic stability in nuclear weapons powers’ equations. Their concerns, specifically, include the following:

1. Absence of mutual accurate controls over accidental or unintentional misuse
2. Simultaneous existence of multiple conceptions for authorized use of nuclear forces
3. The hair-trigger state of a considerable portion of national forces that exacerbates dangers
4. Erosion of confidence in the survivability of the C^2 systems in complicated combat conditions
5. Growing concern about the adequacy of C^2 in countries with dated inventories, especially new nuclear weapons states
6. Absence of an acceptable method for determining a reasonable balance of nuclear forces and C^2 systems

**New Nuclear Weapons States’ Dilemma**

To take the cue from academic writings on evolution of C^2 in nuclear age, Peter Feaver, for example, talks about multiple new dilemmas that confront the ‘new’ nuclear weapons states. If their C^2 set up happens to be too loose, deterrence may ‘fail deadly’ in form of an unauthorized and accidental launch. And, if controls are too tight, then, he says, it may ‘fail impotent’ in allowing a decapitating first strike on C^2 assets short-circuiting any nuclear retaliation. Secondly, Peter Faever also highlights the ‘always/never’ dilemma where nuclear weapons must be (i) Reliable, i.e., unable to fail at the moment when leaders want to use them; (ii) Safe, i.e., unlikely to detonate accidentally; and (iii) Secure, i.e., resistant to efforts by unauthorized people to detonate them. This seems particularly a tall order for new nuclear weapons states.

Peter Feaver especially examines new nuclear weapons States’ dilemma of choosing between, what he calls, ‘positive’ and ‘negative’ C^2. According to him, prevention of unwanted use is termed as ‘negative’ control and assurance of wanted use is termed as ‘positive’ control. Negatively, it prevents and ensures
against any accidental and/or unauthorized launching of nuclear weapons. Positively, it guarantees a prompt, flexible and effective response when required and authorized. In peacetime, negative control is predominant. In wartime, positive control takes precedence. Somewhere in between these circumstances a transition occurs on regular basis which calls for dynamism in C² conceptions and structures. Moreover, this transition may or may not be centrally directed, orderly, or complete.\textsuperscript{xii}

The context of ‘new’ nuclear weapons states have also generated academic debates between nuclear pessimists and optimists on what should be the ideal models of C² for the new nuclear weapons states. Amongst these, while the former believe that given their limited resources the new nuclear weapons states are not likely to invest in any extensive C², the later, led by Kenneth Waltz, believe that this is not true as these states have strong reasons to avoid any unwanted nuclear exchange as they possess very limited nuclear assets. Waltz believes that every nuclear power must go through a period in which its C² seems crudely designed yet each has survived and he predicts that “new nuclear powers will be equally capable of surmounting the dilemma posted by unsophisticated command and control practices.”\textsuperscript{xiii} Similarly, Jordan Seng makes this argument of ‘organizations simplicity’ about nuclear weapons states with “small arsenals” which he believes “can be controlled with small control organizations.”\textsuperscript{xiv} But counterarguments to this point by experts like Scott Sagan have remained more influential.

Scott Sagan talks of the organizational ‘near-failures’ wherein, as the nuclear establishments grow from elementary to expansive one, their ‘organizational nature’ of C² normally moves from being, what he calls, ‘assertive’ to ‘delegative’. In dealing with this dichotomy, leaders respectively opt for either ‘assertive’ or ‘delegative’ control models, where decision to launch is held at the very top in the former, and subordinate commanders are authorized to take similar decision in the latter. When it comes to new nuclear weapons states, both are believed to have inherent limitations of credibility and efficacy. In case of Southern Asia, while smaller arsenals may be suitable for an ‘assertive’ model, this also makes them very inviting for decapitating strikes which calls for ‘delegative’ C². Devin Hagerty believes that inadequate C² in Southern Asia are likely to “promote miscalculations of an adversary’s actions or intentions and lead to unnecessary hasty decision-making.”\textsuperscript{xv}

Finally, the evolution of the C² also remains contextually guided by practical wisdom and experience in matters military. The models of C² for each of the new nuclear weapons countries have to, therefore, find required mandate in their respective nuclear doctrines. In the long-run, of course, these nuclear doctrines are themselves products of contextual wisdom and experience in earlier wars and their strategic culture and traditions. Therefore, the broad contours of the C² are determined by (a) the strategic culture and security doctrines of the state, (b) the nature of Civil-Military relation and political culture, (c) the level of economic and technological development, and (d) the external linkages, e.g., military alliances or arrangements. In the immediate, of course, stability or fragility of strategic environment remains major determinant.
Command & Control and Strategic Stability

C² has been widely recognized as an ideal barometer of strategic stability and peace amongst nuclear adversaries. Well-known authority on the subject, Bruce Blair, for example, says: “If command & control fails; nothing else matters.”\textsuperscript{xvi} Extremely high destructive power of nuclear weapons not only puts premium on sophisticated C² but also calls for making nuclear C² a highly dynamic and technical exercise. This is especially critical to ensure its unwavering efficacy in the midst of what Carl von Clausewitz once called as the ‘fog’ of war which now threatens to involve nuclear weapons.\textsuperscript{xvii} In achieving this, both personnel and technologies of the nuclear C² establishment become instrumental in ensuring strategic stability through strengthening the potency of one’s nuclear deterrence.

But the opposite also remains equally true. Strategic stability can also be exceptionally threatened by high technical readiness of nuclear forces and their C² systems for immediate (almost automatic) action.\textsuperscript{xviii} The paradox is that military forces normally prefer high combat readiness, if possible, and automated response, of any weapons necessary. For them, credibility of deterrence clearly hinges on the destructive potential of their weapons. A different picture emerges from the political vantage point which examines security in the larger canvass of political perspective. And it is in this larger political domain – which is where this monograph seeks to focus – that the idea of further lowering this military readiness of nuclear forces has become increasingly popular.\textsuperscript{xix} The larger the dependence on the political apex, the lower is the prescription for combat readiness of nuclear arsenals. In Southern Asia, therefore, strategic stability is not simply desirous of but actually clearly hinges on the efficacy of this political apex of C² of their nuclear weapons establishments.

Indeed, recent strategic debates about ‘deep cuts’ and the successful conclusion of various nuclear arms control agreements between Moscow and Washington DC since early 1990s have been guided by their political wisdom of seeking strategic stability by lowering their forces from high-alert and launch on warning (LOW) status to their lowest levels compatible with the requirements of C². Starting from the time when an enlarged session of China’s Central Military Commission under Deng Xiaoping in 1985 had publically reversed Mao’s position that a global war was imminent and inevitable, experts have been propounding ideas for lowering the readiness of all components of nuclear deterrence – including command & control – down to days, weeks, and months of readiness, and finally to what is called the “zero alert” level.\textsuperscript{xx} This calls for both understanding and emphasizing on the significance of the political apex of nuclear C² and to see how far it can coop with these new expanding responsibilities.

Nature and Scope of Study

This monograph confines itself only to the political component of nuclear C² establishment and exercise. This privileging the political component flows from the premise that (a) nuclear weapons are primarily ‘political’ weapons and (b) that countries under discussion here are not known for having any extensive and advanced networks of C² technologies. Their smaller arsenal also makes their ac-
tual ‘usage’ tempting and compels them to expand their advantages that flow from the deft ‘non-use’ of these technologies. Besides, lack of most advanced C4ISR technologies further enhances their dependence on and expectations from the political apex of their nuclear C2.

Secondly, this monograph also focuses only on the C2 of China, India and Pakistan that too from the perspective of new nuclear weapon states as also from the perspective of countries with small nuclear stockpiles. These three countries are apparently not known for having extensive and advanced nuclear arsenals or extensive C2 establishments. Also, given their sense of vulnerability of their small and/or equally uncomplicated nuclear C2 as also for reasons of their diverse political culture, only limited amounts of details remain available in public. All this places limitations on the nature and scope of this comparative study from venturing into its technological side of their C2 structures. By comparison, the debates and published materials on their political apex remain relatively accessible though still very disjointed and sporadic, making this study worthwhile as well as of critical importance.

Finally, even at a cursory glance, all three countries represent extremely varied political systems and cultures that remain another major challenge for any study of their nuclear C2 though influence of Soviet thinking on China and of West in case of India and Pakistan does make it possible to examine their C2 in the larger context of global nuclear debates. Besides, given that aim of this monograph remains one of enhancing their mutual confidence and trust, this comparative study of China, India and Pakistan C2 surely carries the potential of being a small beginning in that direction. But it is also equally true that divisive forces will also continue to influence their perceptions and policies. There is no denying the fact that their continued emotional and skeptical approach to each other remains overcast even in their academic analysis on such themes.

What remains practical in such a backdrop as also relevant for evolving an objective academic discourse is to focus separately, and specifically, on the political apex of their C2 in terms of its evolution, structures, and interface not only vis-à-vis real or perceived adversaries but also with their respective political, military, scientific and bureaucratic elites. It is especially this component of its interface that defines the potency of their C2 in ensuring strategic stability in Southern Asia. Even within this limited outline, the ‘politico-military’ interface in their C2 remains of utmost significance for gauging the operational efficiency and efficacy of their nuclear deterrence as a tool for ensuring strategic stability in Southern Asia.
CHAPTER TWO:

Nuclear Context of ‘Southern’ Asia

Given their sensational back-to-back 11 nuclear detonations in May 1998, substantive part of nuclear debate has since been focused on Indian and Pakistani nuclear postures and policies. However, their integral link with China – both in providing know-how and technologies to Pakistan and thereby providing political stimuli to India – in transforming South Asia’s nuclear environment remains one critical component that has not been adequately examined. Indeed, this new nuclear context has only re-enforced China’s critical linkages to the conventional conceptions of ‘South’ Asia where four of the eight countries share long borders with China’s turmoil ridden autonomous regions of Tibet and Xinjiang. Meanwhile, in face of nuclear weapons and missile technologies, Himalayas have long ceased to be the proverbial impregnable frontiers between the Sinic and the Indic societies. Accordingly, ‘Southern’ Asia today presents perhaps a far more appropriate format to appreciate the inter-linkages of China, India and Pakistan and to examine the efficacy of their nuclear C2 in ensuring peace and stability in this larger region.

Arguments, of course, in face of nuclear weapons and missile technologies continue to be made as to why is there so much hype about C2 in the nuclear context in Southern Asia? Haven’t China, India and Pakistan fought several wars and always demonstrated ‘control’ and ‘restraint’ both in their words and actions. Why should they behave any different when it comes to their war-fighting policies in the nuclear context? The difference of their nuclear context is sought to be explained by highlighting the uniqueness of Southern Asia’s dangerous ‘nuclear triangle’ which has no parallel for C2 models or any other lessons. Moreover, these are the only three nuclear weapons states that have continued to fight wars with nuclear adversaries as also fought several other wars in their recent past. Even now they continue to have political polemics and military showdowns which defy all the extant wisdom of nuclear theology developed in the context of East-West relations during the Cold War years.

Especially in case of India and Pakistan, western experts have often pointed to Kashmir as a possible nuclear flashpoint; about their lack of operational abilities to maintain control on nuclear weapons and how they lack even the basic understanding about the criticality of C2 requirements. While China was the first example of nuclear weapons state fighting a direct war with another nuclear weapon state (Soviet Union) in 1969, the 1999 saw India and Pakistan engaged in a direct war where both not only possessed but also at least indirectly eluded to their nuclear weapons and missiles. All this clearly questions the conventional wisdom as to whether western models like ‘stability-instability paradigm’ of John Hertz explain the India-Pakistan military showdowns in 1999 and 2002. Southern Asian example confirms the dictum that nuclear weapons deter but only nuclear weapons. From that perspective, Southern Asian case may actually contribute to theories of nuclear deterrence and may provide important lessons in understanding the evolving and future equations amongst other potential nuclear weapon
countries as also between Moscow and Washington as they gradually move towards smaller nuclear stockpiles. Southern Asia may also provide lessons on how to ensure deterrence stability in face of new challenges from criminals, extremists and terrorists.

**The ‘Dangerous’ Nuclear Triangle**

In case of Southern Asia, their $C^2$ in the ‘nuclear’ context indeed makes a clear break from their historical past in more than one ways. Conventional models seem to become particularly vulnerable when it comes to China-India-Pakistan nuclear equations. Lack of information (and lack of trust on information) remains their unique challenge. Then, both their differing levels of transparency as also differing cultural contexts for nuances and interpretations add to their confusions. For instance, while the Chinese and Indian nuclear doctrines are far clearly articulated, there have been at best only broad official and unofficial inferences when it comes to Pakistani nuclear doctrine.

To enumerate some of the other distinctions that remain especially critical in case of examining the nuclear $C^2$ of China, India and Pakistan, one may enlist the following –

- Firstly, given that the nuclear triangle of China-India-Pakistan shares close physical proximity and that they continue to share long and disputed borders – for which they have fought several wars – make their equations very unstable. While this enhances chances of their nuclear exchange, what particularly remains threatening in their being so close to each other is the shortest reaction time for their political apex.

- Secondly, the fact that all three possess minimalist arsenals – which threaten to stoke up panic and temptations to contemplate a decapitating strike – only further re-enforces the need for having a robust, innovative, futuristic $C^2$ establishment that can ensure necessary intelligence, early-warnings as also reliable restraint as well as efficiency in their actual usage, all at the same time.

- Thirdly, to these conditions can be added the new and ever increasing threats from non-state actors. Only few nuclear regimes, norms or other mechanisms have been put in place as yet to deal with non-State actors. All three, China-India-Pakistan, have been and remain victims to terrorism. Pakistani $C^2$ is believed to be particularly vulnerable given repeated allegations of the close proximity and access of some of the non-state outfits with the State organs.

- And finally, in Southern Asia the traditional fears about an accidental, unintended and unauthorized launches or simply of misinformation, misperception or miscalculation are believed to have larger probability ratio. Successive nuclear crisis involving these states are cited to allude to such dangers.

To begin with, China’s reactions to 11 nuclear tests in May 1998 had left no doubt that it was fully aware of the threats from this nuclear triangle and of its stakes and vulnerabilities to these emerging nuclear states on its southwestern periphery. China’s response to nuclear tests by India and Pakistan had been understandably harsh though these reactions were also
very selective and particularly sought to blame India for unleashing this nightmare. Also, unlike the foreign office, response from China’s military was particularly harsh blaming India as trying “to seek hegemony in South Asia, contain China, control the Indian Ocean, and strive to become military power in the contemporary world” also underlining development of India’s intermediate range ballistic missile Agni-III to say how “China’s central and south regions are within its reach”. xxv

No doubt, some of these India-centric reactions were understandable in the context of (a) the then Indian Prime Minister’s letter to US President explaining China threat as to why India had decided to go nuclear and (b) the earlier statement by India’s Defense Minister describing China as India’s number one enemy. xxvi Yet, it also reflected how these 1998 tests on China’s southwestern borders did add a new dimension to China’s security concerns and military strategies. According to various Chinese officials interviewed during that time there was sharp dichotomy emerging where Central Military Commission (CMC) wanted to maintain its focus on Taiwan and South China Sea while the senior military researchers were pushing for a shift of focus to India and Japan. xxvii But as has been China’s attitude towards nuclear weapons (read paper tigers) in general, it has also shown little inclination to officially admit to how this nuclear triangle has transformed its security strategies.

No ‘First Use’ and Weak ‘Second’ Strike

For all practical purposes, all of them (China, India and Pakistan), continue to practice conditional No-First Use (NFU) doctrines with various speculations and interpretations. But, while all three have some version of NFU doctrine, only China has a somewhat functioning nuclear triad in place to make its NFU credible. But even China’s ‘second’ strike capability seems hardly usable against its perceived adversary, the United States. India, of course, had outlined its NFU doctrine on 11th May 1998 and has fiirmed it up on several subsequent occasions including in the October 2009 Indo-US Civil Nuclear Cooperation Agreement. As regards Pakistan, it does not have a formal expressed nuclear doctrine which lends credibility to the view that Islamabad does not completely rule out its having a NFU doctrine as guiding principle for a decentralized C2 xxviii Islamabad has also made necessary noises and inferences in that spirit.

Firstly, let us examine Pakistan’s NFU-guided C2. Scholars may have reasons to be skeptical of Islamabad yet, given its physical size, crude technologies, and the current size and pace of expansion of its arsenal and absence of ‘second’ strike capability, it remains impossible that Islamabad will ever conceive of a credible ‘decapitating’ first strike. Besides, Pakistan has been so successful in its low intensity conflict (LIC) strategy that it has absolutely no reason to escalate conflict into a major conventional war leave alone a nuclear strike. As regards its nuclear C2, given its small nuclear arsenal, rancor and rumors about its relative inclination in favor of NFU doctrine, Pakistan is widely suspected to opt for an assertive C2 model that, in turn, should necessitate an NFU doctrine.

Secondly, China and India have also only conditionally pledged to NFU doctrine and are expected to prefer ‘asser-
However, their C$^2$ will have unique limitations when it comes to nuclear-tipped sea launched ballistic missiles (SLBMs) based on nuclear submarines. The fact that sea water attenuates the signals strength means that submarines must rise to shallower waters to send or receive any communications. This basically means trading its unique property of stealth for connectivity which beats the basic purpose of sea-based nuclear assets whose stealth is expected to make nuclear deterrence credible by ensuring the survivability for a second strike option. This means that their C$^2$ will gradually become ‘delegative’ in nature as their arsenals become overt and expand to develop a nuclear triad with submarine launched nukes capable of attacking from deep and far in open oceans.

Even in case of China, these limitations of C$^2$ with regards to its sea-based assets has to be viewed in the context of China’s overall dated inventories which provide huge advantage to the United States forces which may be target of China’s nuclear deterrence. However, viewed in terms of China’s deterrence vis-à-vis India (or Pakistan), this surely brings Beijing advantages of enormous magnitudes against both Islamabad and New Delhi. Only as of now China has absolutely no fears of Indian or Pakistani ‘first’ strike on it so as to even contemplate a ‘second’ strike against these two countries.

As regards India’s second-strike, it has had an advanced technology vehicle (ATV is the name for nuclear submarine) project going on for about three decades and it still does not seem becoming operational anytime in near future. Similarly, India has also been working on Saagarika SLBM. Here again, success has been slow and partial. Meanwhile, India has been planning to put its sea-based missiles aboard its surface vessels and have also carried out successful tests of sea-launched cruise missiles.

As regards Pakistan, it is widely believed that Pakistan is not even planning for a sea-based nuclear deterrence and this seems to strengthen the counterargument that it favors a ‘First-Use’ policy. In case of India (and even China) the slow pace of technological advancements seems so much insulated from their mutual suspicions and resultant political rhetoric of threat perceptions. As if, lack of financial resources and technologies are often sought to be compensated by political jingoism and this has sustained the centrality of their political apex in their nuclear C$^2$.

Continuing Centrality of Political Apex

Even if piecemeal, this gradual expansion and intensification of nuclear technologies in Southern Asia have come to involve life and stakes of everyone of their over 2.5 billion people. Given their expressed faith in democratic institutions, this puts the onus of decision-making in China, India and Pakistan on people’s representatives and not so much on professionals who can only have an advisory role, that too as prescribed by the representatives of people. So, all three agree that in the nuclear context, ideally, it is the elected leadership that is expected to be the ultimate authority to exercise C$^2$. But, beyond these broad similarities, these three countries present very different models of nuclear decision-making. In China, the apex of politico-military leadership has been gradually replaced
by politico-technocrats which have slowly reduced the role of People’s Liberation Army (PLA) leadership in decision-making. In India, politicians have always been wary of military and its leadership has not had even the minimalist role in decision-making. Pakistan represents the curious case of being ruled more often by military; coups often followed by Generals being elected to political office. So, in spite of respecting democracy, role of non-military politicians has at best been sporadic and on the periphery or just plain ceremonial.

In case of China and India, the significance of their political apex remains especially vital. As they have formally pledged to an NFU doctrine, it calls for tighter political control on their military operations. This is what explains their obsession with ‘restraint’ that has been sustained in face of neither of them having a dependable nuclear triad which remains a must to ensure a guaranteed ‘second strike’ needed to sustain the credibility of their nuclear deterrence. While India has failed to develop its Sagarika SLBM for about three decades, China’s Julang-2 has also been in news over a decade now and both projects continue to be overcast in controversies. This requires them to demonstrate their political resolve and commitment to ensure ‘restraint’ in face of any real or perceived danger requiring a nuclear response. But privileging political resolve has also led them to allow varying interpretations to their NFU doctrine gradually introducing cracks in its original sanctity and efficacy.

In case of India, the country is also believed to lack an assertive strategic culture considered so critical for nuclear posturing and operations in both peace- and wartime. If anything, founding fathers of India had been skeptical of military and military options which resulted in gradual marginalization of India’s armed forces from decision-making structures and political committees continue to take most of the decisions. This partly explains why the military apex of India’s C^2, as outlined, remains still in-the-making with the central issue of Chief of Defense Staff (CDS).

But position of Pakistan also remains less than enviable. First of all these remain only inferences that Pakistan has a No-First-Use or First-Use nuclear doctrine. Such varied inferences make it vulnerable to unauthorized and unintended nuclear weapon launches. This also lends credibility to misinformation (about such possible launches) making threat of pre-emption by its adversaries, a far more compelling possibility. This argument becomes most tenable given the confusion in Pakistan’s political fragmentation but more so given its ever growing inability to deal with radical outfits of various non-State actors. It remains unclear how far Pakistan’s civilian leaders have had real access to (let alone control of) their nuclear assets.

Repeated disruption of civil-military relations in Pakistan remains a major challenge not only for Pakistan but for the strategic stability of China-India-Pakistan trilateral relationship. This puts premium on expanding transparency about the politico-military apex of their nuclear C^2 which remains a key to ensuring strategic stability in Southern Asia. To enumerate some of the major limitations of even the political apex of their C^2 one may enlist the following –
• Firstly, the political apex does not always behave like the highly abstract models of rational decision-making institutions that are commonly used to explain and prescribe nuclear operations. Often, these leaders have to deal with situations not preconceived in the rule-book and take on-the-spot decision which makes the political apex unusually pivotal.

• Second, their technical components remain under long-term development – both conceptually and technically – and this remains especially true of their C4ISR systems. The paradox is that while the hawks consider C2 as something of a natural corollary of nuclear weapons, the peaceniks describe developing these C4ISR systems as too expensive a proposition. Meanwhile, the skeptics continue to list the history of mishaps and question if political elite in Islamabad, New Delhi or Beijing can ever be trusted with nuclear weapon capabilities.

• Third, as of now, all three countries also represent a unique case of voluntarily keeping to a rather small nuclear arsenals. In view of No-First Use doctrines of China and India (and such inferences in case of Pakistan), it puts undue pressure on optimizing and multiplying their deterrence-impact. This again calls for ingenious political control and direction of their nuclear and missiles assets and technologies.

Inter-linkages and Implications

The nuclear context of ‘Southern’ Asia, therefore, presents a unique picture of minimalist stockpiles, weak to none ‘second’ strike capabilities, and little motivation for first decapitating strike and a common threat of disruption or sabotage from non-state actors. But above all, this unique nuclear triangle presents a cocktail of deep rooted mutual suspicions and surface level strong trends for confidence-building and rapprochement. This shows how their respective political elite and diplomats have perceptions poles apart from their respective militaries. Only, in case of China and India, while it is politics that controls military, in Pakistan it is military that controls politics which again complicates their mutual understanding. But efforts have also been made to rectify this given complex reality. For instance, the composite dialogue of India and Pakistan specifically includes dialogue on nuclear confidence building measures (CBMs).

Secondly, in the long-run, this unique triangle of Southern Asia promises to provide lessons not only for further evolution of East-West conventional nuclear theologies but also provide a new framework to understand new genre of emerging small nuclear weapons powers like North Korea and possibly Iran. None of these believe in rapid nuclear arms race or in conventional military alliances, let alone seeking global presence or even influence. All these have special implications for the evolution of the inter-linkages of their nuclear C2 structures and operations. Nevertheless, while the political apex of the nuclear C2 of these post-1998 new nuclear weapons countries differs from those East-West models, it remains yet to prove their credentials.

In sum, while nuclear C2 of China-India-Pakistan have no doubt learnt so much from existing East-West models,
these also promise to contribute to the evolution of those models. This is especially true given that both Russia and US have been successfully moving their stockpiles, under their post-START arrangements to minimal levels of under 1,000 warheads, and that all of these become increasingly exposed to common threats and challenges from radical non-state actors’ outfits. This may also provide us some clues as to how can C² models help all nuclear weapon states to achieve strategic stability as they work towards their utopian ‘global zero’ paradigm. It is in this backdrop that this monograph examines first individually and then evolves a common assessment of the political apex of the nuclear C² of China-India-Pakistan and to evaluate its role in ensuring the strategic stability of this region.
CHAPTER THREE:

China’s Military Command & Control

China’s military system remains an enigma in more than one ways. However, rise of China in last two to three decade has increasingly compelled global community to try and understand what lies beneath ‘Chinese characteristics’ that continue to camouflage its aping of western free-market paradigms. More specifically, with regard to China’s response to nuclear weapons (which Mao called paper tigers) Chinese leadership remains confident of ‘surviving’ a nuclear attack and it continues to believe that “the focus of war would be in the conventional battlefield.” As a result, China has not evolved any special National Command Authority exclusively to deal with C^2 of nuclear weapons and its overall military C^2 remains unchanged and guided by its Central Military Commission (CMC) which was created way back at the time of China’s first All-Soviet Congress in 1931 under the Communist Party of China (CPC).

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All military matters and national security as also all its men under uniform – from those with finger on nuclear button to men guarding factories and guiding traffic in cities – remain under the direct and unified command of the CMC. Even under Deng Xiaoping, when he unleashed reforms in all sectors – something that came to be called China’s second revolution – he zealously defended the stature of the CMC. So even when the 1982 Constitution (article 94) stipulated that “The Chairman of the CMC is responsible to the National People’s Congress and its Standing Committee” and led to creation of a mirror image CMC of the State Council, Deng ensured that these remained only superficial changes. So much so that PLA publications continued to clarify that it is the Party CMC that will continue to exercise leadership over China’s armed forces and that “procedures will remain unchanged”. Therefore, in spite of stupendous changes at the superficial level, the basic thrust and character of China’s C^2 remains unchanged.

Party versus the State Debate

Any discussion on China’s C^2 must begin with a few clarifications. Firstly, in the personality driven decision-making of China, institutional arrangements tell only part of the story while lack of information remains a fundamental hurdle. Even at the very helm of affairs, major appointments are usually announced and dismissals have to be almost always inferred. Second, and more important, any examination of China’s civil-military relations must begin by underlining the unique profile of China’s armed forces, i.e., the People’s Liberation Army and all its other affiliates. Unlike most states, China’s armed forces remain forces of CPC and not of State, i.e., People’s Republic of China.

Third, China’s military has also inherited the ethos where till 1949 (but even till later) it was difficult to distinguish between party and military in view of the frequent practice of holding concurrent military, party and administrative position. As part of efforts to professionalize it, the retirement age and modern ranking system was introduced in PLA only gradually from early 1980s. With minor changes, this spirit (even practice) of Party being deeply entrenched into and playing the backbone role in all other
institutions including military, has continued unabated. As a result, the Party has repeatedly adopted ad hoc initiatives and often ignored conventions and even the Constitution, all to ensure CPC’s unquestioned writ over China’s armed force structures and operations.

And finally, it is also not fully true that China’s military structures remain essentially based on Soviet model and that, in spite of occasional questioning, Soviet influence on contemporary military ethos and instructions continue to be decisive. There remain, indeed, critical differences. Unlike the case of Soviet Union, China’s decision-making remained driven by political and personality elements rather than by its military institutions. This is especially true of China’s realm of nuclear strategy where military’s involvement remains less than direct in most cases.

China, for instance, has no institution resembling the powerful Soviet Strategic Rocket Forces. China’s Second Artillery is not even treated as a full department under PLA and it seems to be far more tied to central foreign policy-making and might in some respects be seen as a short-cut, obviating the need for large spending on conventional forces.

**Central Military Commission and Ministry of Defense**

The CMC remains the other most unique phenomenon in China’s C² paradigm. According to *China’s National Defense Paper, 2000*, the CMC of the PRC directs and assumes unified command of the nation’s armed forces. In reality, however, the ultimate authority for all military matters has always been vested into a handful of top party leaders that constitute the core of the CMC. Sporadic changes in its names, membership and structures have always been superficial and meant only to accommodate some unusual situations.

For instance, the 1980s was a decade of China’s reformation; even the military establishment was metamorphosed beyond recognition. This had ignited both speculations as also expectations in expanding the State control over China’s armed forces. However, what made this issue center of debate throughout 1980s was that even if it was only at superficial level, China’s new Constitution of 1982 had vested powers in President of the Republic “to proclaim the state of war” and the State Council “to direct and administer national defense” and its CMC to command nations armed forces, including nuclear forces. But, it is interesting to note that in September 1982 plenary of the CPC, Deng had got the Party CMC re-elected. The same people were ditto elected by the National People’s Congress (NPC), three months later, in December 1982, to be the CMC of the State Council.

Even within these arrangements, series of amendments had to be carried to accommodate Deng’s desire to stay on as Chairman of the CMC thereby only further stressing how the Party CMC remained source of ultimate power in China. Traditionally, the Chairman of the CPC was ex-officio Chairman of the CMC. But Deng wanted to continue as Chairman of the CMC without holding any other position in the Government or Party. The power of the Party CMC was demonstrated by Deng again in the June 1989 Tiananmen Square crisis when he personally persuaded the Military Region Commanders to send troops into Beijing.
to impose martial law against the strong opposition from Party Chief Zhao Ziyang and without the prior approval of the NPC. Indeed, Deng stayed in control of the CMC longer than anybody else, including Mao. This clearly reinforced the centrality of the Party CMC to China’s C3 structures.

Nevertheless, these, two types of CMC – one is Party’s CMC, i.e., Zhongguo Gongchandang Zhongyang Junshi Weiyuanhui and the other State Council’s CMC, i.e., Guojia Zhongyang Junshi Weiyuanhui – have often managed to create confusion. Even within the Party CMC, reading of Chinese tea-leaves brings forth the interesting intra-Party pulls and pressures. Technically, the Party CMC was conceived as a department of the Central Committee of CPC and operates under the direction of Political bureau and the Central Committee Chairman. In practice, however, it has been a power unto itself often pulling strings independently of any other center of power. So much so that in June 1981, Chairmanship of the CMC had become the symbol of how the post-Mao leadership issue was settled between Mao’s handpicked successor, Hua Guofeng and Deng Xiaoping who ‘reluctantly’ assumed the Chairmanship of the Party CMC without being the Chairman of the Central Committee of CPC as was stipulated to be the case in Clause xix of the 1982 Constitution. This was the position that made Deng China’s ‘paramount’ leader, a title he retained until his death in 1997. The same Chairmanship of CMC was also used in post-Tiananmen Square crisis succession of leadership to enthrone then virtually unknown Jiang Zemin and for completing the process of dislodging Yang brothers from leadership.

In the initial years, Jiang’s position as Chairman of CMC and the supreme commander of China’s armed forces did appear weakened by presence of two veteran military leaders – Admiral Liu Huaqing and Gen Zhang Zhen – and Jiang appears to evolve a policy of referring PLA issues to these veterans. However, Jiang soon used his Chairmanship of CMC to unleash a wholesale change of China’s armed forces starting from the CMC. Prescribing the retirement age of 70 years, the 16th Party Congress ushered in a new high command for China’s armed forces. Even the purges of Yang Brothers (1992) or the Lin Biao affair (1971) had not seen such extensive changes in PLA leadership. Jiang was to retain Chairmanship of Party CMC till 2003 and amongst his three positions – President of PRC, Secretary General of CPC and Chairman of CMC – this was the last to be passed on to his successor, Hu Jintao.

Similarly, China’s State Council is constitutionally charged with “direct[ing] and administer[ing] the building of national defense” (article 89). Ostensibly this power is exercised via the Ministry of National Defense. However, the Ministry of National Defense remains essentially a shell entity that is headed by a soldier rather than a civilian. Today, in matter of higher defense direction and policy making, the ministry stands largely ignored. Power and authority continue to be concentrated in the Party CMC operationalized through the PLA’s four departments and commanders of seven Military Regions. The Ministry of National Defense serves purely ceremonial, diplomatic, and coordinating functions, such as a place to greet foreign military delegations.

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Swaran Singh
In terms of the practical division of responsibilities as of today, the C² of China’s armed forces are exercised by the CMC while the Ministry of National Defense provides administrative support to China’s armed forces.¹ In operational terms, therefore, while the Second Artillery Corps retains the operational control of China’s land-, air-, and sea-based nuclear missiles, the political control over the nuclear forces is exercised by the Chairman of the CMC and all these Corps come under the operational control of the PLA’s General Staff Department.²

The Second Artillery

The Second Artillery remains one most intriguing structure in China’s nuclear C² establishment. To begin with, it is only a strategic missile force. Soviet models, which have influenced China somewhat, do provide but only a limited clarification about its implied significance and ethos. To go back to its inception, it was PLA’s decision, way back during October 1956, to build a strategic missile force and the first surface-to-surface missile battalion had been set up by December 1957. From early 1960, some military regions began to form similar battalions (ying), and by 1964 these were elevated to regiment (tuan) status. The Second Artillery was formally established by the CMC only on 6 June 1966 as the Cultural Revolution was getting under way in China.³ Premier, Zhou Enlai called it the Second Artillery (Di ErPao Bing) to separate it from PLA’s existing Artillery Corps.

From its very inception, the Second Artillery maintained China’s arsenal of both conventional and nuclear-armed ballistic missiles. In 1968, Second Artillery regiments were divided into short-range (jincheng) intermediate-range (zhongcheng), long-range (yuanchang), and intercontinental (zhouji) units – although the ErPao would not successfully test an ICBM until 1980. After the division, the strategic missile forces (zhanluedaodanbudui) were further separated administratively. Organizationally, the Second Artillery does not enjoy the full status of a service (junzhong) of the PLA, like the air force or navy have acquired over the years. Rather, since its creation, the Second Artillery has been only a service arm (bingzhong) and is a half rank lower bureaucratically than the other services, although its command chain is directly linked to the CMC via the GSD.

It is not certain exactly how the communications to launch missile is conveyed via the GSD, but it is believed that there are also separate and secure communications lines from the CMC to Second Artillery Headquarters and thence to all launch brigades (See Figure 3.1). It is also understood that a launch brigade must receive separate communications from the CMC and GSD before a launch is authorized. Second Artillery Headquarters also oversee warhead and missile storage facilities, maintenance units, and special transportation services for moving missiles and warheads. In terms of its internal organization, aside from the Headquarters Department, the Second Artillery has four first-level departments and ten second-level departments. First-level departments have subunits that parallel the internal structure of the four general headquarters and are to be found in the other services.
The Second Artillery’s ballistic missiles arsenal is dispersed across China. The Second Artillery is headquartered at Qinghe (on the road to the Badaling section of the Great Wall on the northwest outskirts of Beijing near Nankou and Changping). It oversees six launch bases, each of corps level (junji) size. These are in Shenyang (Liaoning), Huangshan (Anhui), Kunming (Yunnan), Luoyang (Henan), Huaihua (Hunan) and Xining (Qinghai province). In addition, the Second Artillery also maintains test ranges at Jiuquan, Taiyuan, Wuzhai, Xichang, Baoji and Lop Nor, several stockpile storage facilities, and a number of colleges including the Missile Forces Academy at Xi’an.

The PLA apparently maintains a crisis command center in a mountain at Xishan (western hills) in the military district of western Beijing, which includes Command, Control, and early-warning equipment. The Chinese leadership also has command bunkers at Hohhot in Inner Mongolia and Yuquan Mountain in the Xishan range just west of Beijing, where they could retreat in the case of nuclear attack. The Second Artillery works closely with the sprawling research and development network under the First, Second, Third, Fourth, Fifth, and Ninth Academies. The First Academy is responsible for surface-to-surface missiles and carriers’ rocket development, the Second Academy for surface-to-air missiles, the Third Academy for coastal defense missiles, the Fourth Academy for solid-propellant rockets, the Fifth Academy for satellites, and the Ninth Academy for tactical air defense and carrier rockets.

The Second Artillery is clearly a favored force of the PLA, and can be expected to grow in resources, personnel (currently approximately 100,000), and weaponry. As it does so, it will continue to evolve organizationally. Perhaps its C² procedures, as well as launch procedures and stockpiles storage would also change if and when the Second Artillery engaged in dialogue with other established nuclear powers. During the 1990s, for example, the US government attempted to initiate a “strategic dialogue” between the US Strategic Command (STRATCOM) and the Second Artillery, but the effort was rebuffed by the Chinese government. However, in fast evolving new reality since 9/11 and the US global war on terror, Chinese leaders have become far more receptive to values of open dialogue and transparency. Nuclear safety, for instance, has become their increasingly new priority.

Co-opting China’s Sea-based assets

China’s expanding submarine fleet deserves special attention as it presents several unique challenges for both China’s C² as also for strategic stability of Southern Asia. Development of second-generation nuclear-powered attack and ballistic-missile submarines as well as purchase of Russian Kilo-class submarines present China’s C² several unique new challenges. The traditional command culture in China emphasizes on caution and discourages initiatives without explicit instructions from high command. This is considered an impediment as China evolves advanced C² and could (a) turn its multiple secure channels redundant, and (b) result in greater centralization.\textsuperscript{33i}

This has special implications for China’s nuclear submarines. In crisis situation, China’s communications with its submarine fleet leave so much to be desired. It seems these submarines have to raise themselves
to shallower waters to convey or receive any instructions. Now hypothetically, operating in east coast of Taiwan, to hunt any carrier strike groups, how can these be expected to surface and transmit requests for guidance from Beijing? Even in peacetime PLAN remains part of PLA and its commanders are subject to multiple lines of authority from headquarters, from their respective Military Regions, four General Departments and so on. Because of this weakness, PLA supreme command (tong-shuaibu) is supposed to have established a streamlined joint wartime command structure. But closer review of Chinese writings shows that instead of delegation-style command, the new focus on network-centric warfare (wangluozhongxinzhan) is seeking to further tighten control over all of its nuclear assets including submarines. All this has serious implications for China’s nuclear C^2 systems and operations.

Assessment and Conclusion

China today has CMC that represents the politico-military apex of its C^2 and these leaders are ensured protection in wartime in an extensive network of hardened, underground C^2 facilities. Fear of a possible war with Soviet Union in 1960s and 1970s had prompted Beijing to expend considerable resources constructing national-level command posts and associated communications. China’s C^2 network is today supported by both civilian and military communications. These networks remain separated and carry over multiple transmission systems to include coaxial and fiber optics cable, satellite communications, microwave radio relay, and long-range high frequency (HF) radio. China’s communications networks, both civil and military would be capable of supporting a wide range of military operations.

The first Persian Gulf War of 1991 had led to serious debates in China’s warfighting doctrines including the need for modern, survivable and robust C^2 systems. This was to see China launch several new projects and evolved its nuclear deterrence from minimum to ‘limited’ deterrence (youxianweishe). But views about the efficacy of China’s C^2, even amongst well-known experts, remain divided. For one expert, China’s use of commercial satellites for both reconnaissance and communications demonstrates a pattern of overall weakess in China’s military capabilities. For the other, China’s now uses of global-positioning satellite systems provide warheads with terminal guidance packages to improve accuracy. China’s gradual yet astonishing thrust in building space technologies, however, allude to the future attitude and direction of its C^2 technologies which are likely to focus more on C^2 as multiplier of the potential of its nuclear assets.

However, as China launches its own Global Positioning System (GPS), refines its anti-Satellite (ASAT) and ballistic missile defense (BMD) technologies, this has also become increasingly commercialized in its approach as also politically engaged in conducing strategic dialogues with the external world. Secondly, increasing focus on non-state actors’ threats to both conventional and nuclear establishment have increasingly pushed nations to work together rather than in isolation. This has clearly seen China emphasizing on broadening its security perspectives and expanding the cooperation component of its C^2 formulations. This clearly augurs well for both India and Pakistan that remain relatively on the learning curb in evolving their C^2 structures.
Diagram
CHAPTER FOUR:

India’s Nuclear Command & Control

India has been known for being one of the few counties where an open debate – and so much of open debate – preceded its actual weaponization of its nuclear technologies. The debates for weaponsization had sprouted following rumors about China planning to conduct a nuclear test from early 1960s and this was repeatedly revived in face of several other crises including the 1971 India-Pakistan war that had witnessed US sending its Seventh Fleet to the Bay of Bengal. Amongst others, this had led India to expedite its historic tilt towards Soviet Union as also signing the treaty of friendship. This has often led to accusations of Soviet contribution and influence into India’s search for nuclear weapons technologies.

Secondly, given that India’s independence had been result of a peaceful transfer of power, most of the enormous and imperial institutional traditions in higher management of defense were inherited from the British Indian administration which had both its advantage and disadvantages. Till India’s independence in 1947, for instance, Indian elite had little knowledge and experience of higher management of defense. While Indians had been gradually co-opted into civilian administration, even the British civil servants in India were not allowed any role in India’s defense management till 1947. Even India’s Governor Generals/Viceroyos never had full control over the military and Defense Department had remained “a secret post office…. in the line between the military headquarters in India under the Commander-in-Chief… and the Secretary of State for India and the War Department in London.”

Thirdly, newly independent India was born not only in the backdrop of six years of violent World War II that ended with two atomic bombs being dropped in Japan but was to witness its neighbors becoming victims of military coups, one after another. All this was to make India’s founding fathers skeptical of military establishments. This was to see them emphasize on the supremacy of civilian leadership and apolitical nature of country’s armed forces. While Article 51 of Indian Constitution (Directive Principles) enjoined on State to work for “promotion of international peace security”, Article 53 vested the “supreme command of the Defense Forces of the Union” in the elected President of the Republic. In actual practice, however, it is the Prime Minister, who by convention uses this authority and this has never been challenged in last 63-years. And most noticeable part of civilian control has been their skepticism or military and military options which continue to underwrite the evolution of India’s nuclear C^2 formulations and structures.

The result is that the evolution of India’s formulation of its decision-making structures on national defense – including nuclear C^2 – have witnessed a “near complete exclusion of the military during most of its history” allowing generalists – scientists and bureaucrats – to emerge as security experts. This makes commentators describe how, lacking a dominant institution as has been the case with Army in Pakistan, India’s nuclear efforts have been shaped by political, bureaucratic and military rivalries. This explains why the process of nuclear deterrence had remained confined only to
‘building-the-bomb’ with few thoughts on how to actually use these assets. It is only after 1998 that serious thoughts were given to issues like C^2 or fighting a limited nuclear war which remains critical to any thinking about fighting a war in nuclear context.

**Higher Direction of Defense**

As soon as the Interim Government was formed in September 1946, Jawaharlal Nehru had submitted concrete proposals for the formulation of a Defense Committee of the Cabinet (DCC). A year later, on 30th September 1947, India’s first DCC was constituted with Prime Minister Nehru, as its Chair and Vallabhbhai Patel (interior minister), Sardar Baldev Singh (defence minister), and T.T. Krishnamchari (finance minister) as its members. Other ministers could be co-opted from time to time and, among others, Maulana Abul Kalam Azad was always present in it no matter what ministerial portfolio he occupied.

This committee system provided an extremely flexible and pro-civilian C^2 framework for civilian-military-bureaucratic top leadership where all political heavyweights could be accommodated while three Services Chiefs and Secretary (Ministry of Defense) and Financial Adviser (Defense) sat in attendance only to provide military appreciation or clarifications on issues under deliberation. It also allowed it to be used or kept unused or called by different names as Cabinet Committee on Political Affairs or Cabinet Committee on National Security or Cabinet Committee on Security. Committee system also facilitated consensus and quick decisions and Indira Gandhi later created Prime Minister’s Office (PMO) which has since become another hub of all national decision-making.\(^{lxxvi}\)

Then within Ministry of Defense, there were Defense Minister’s Committee, Defense Ministers Committees on Army, Navy and Air Force as also Defense Minister’s Production Committee, Research and Development Council and Military Affairs Committee. Then there is Chiefs of Staff Committee which is headed by the senior most of the three Services Chiefs. Other committees that contributed to higher direction of defense included the Joint Intelligence Committee (formed in 1948), Emergency Committee of Secretaries (formed in 1962), Committee on Defense Planning (formed in 1979), and so on.\(^{lxxvii}\) This basically showed strong inclination in favor of Committee system and in spite of changes in India’s command structures, this mindset continues to thrive in all nuclear decision-making.

Starting from early 1980s, visionary Generals like Army Chief Sunderji had been publically stressing on the need for National Command Post and a policy paper to that effect had been jointly approved by the service chiefs. The first formal attempt to move away from the Committee system, however, was made by Prime Minister Rajiv Gandhi who is also known for having formally authorized a nuclear weapons program in mid-1980s. This was an experiment in having a more organic interface between political and bureaucratic leaders. Called the Policy Advisory Group (PAG) it comprised of junior ministers in ministries of external affairs, defense, home, the Cabinet Secretary, the Head of Research & Analysis Wing and Director of Institute of Defense Studies & Analysis. This was to have a direct access to Cabinet Committee on...
Political Affairs but this was disbanded after the fiasco of India’s Peacekeeping in Sri Lanka.\textsuperscript{lviii} This experiment, however, had triggered a trend in favor of formalizing more professional national security structures.

On August 24, 1990, for instance, the National Front Government had set up a four-tier structure comprising (a) National Security Council (NSC) that was to be chaired by Prime Minister and it resembled the DCC with provision for provincial Chief Ministers being invited as special invitees, (b) Strategic Core Group to be chaired by Cabinet Secretary with three Service Chiefs and representatives of ministries present in NSC, (c) three specialized Task Forces, and (d) a National Security Advisory Board consisting of Members of Parliament, academics, scientists and other experts. However, given the short life of National Front Government, these structures remained only on paper and occasionally debated and finally rejected by the next Prime Minister.\textsuperscript{lxix} The serious debate on national security structures was now to be revived only after India’s nuclear tests of May 1998.

**Nuclear Command & Control**

The first institutional structure to deal with nuclear assets had been the Atomic Energy Commission (AEC) that was created under Atomic Energy Act of 1948 amended in 1962 and 1987. And since focus on India’s nuclear research had been civilian, the AEC continued to be in control of nuclear assets even when India moved to developing nuclear science for military purposes. Similarly, all missile development programmes under Defense Research and Development Organisation (DRDO) have also remained under civilian – scientists or officials. Even when in the post-1998 context, a Group of Ministers (GoM) report of 2001 had recommended creation of a Chief of Defense Staff, this has still not been implemented so far underlining the strong civilian control over matters nuclear and especially on C\textsuperscript{2}.

As first action in response to the nuclear tests of May 1998, Government of India had set up a three-member task force, under former Defense Minister K C Pant to make recommendations for post-1998 national security structures. The report of this task force though was reportedly rejected and the BJP Government set up a National Security Council in November 1998. This was headed by a Political Council at its apex which was to be chaired by the Prime Minister and included ministers of defense, home, finance, and external affairs as also deputy chairman of the planning commission. It is supported by an Executive Committee to be chaired by National Security Advisor (NSA) who heads the National Security Council Secretariat and also by two other bodies namely the Strategic Policy Group (SPG) and a National Security Advisory Board (NSAB) which consisted of respectively serving and retired military and bureaucratic leaders though the later also included a few public intellectuals. The broad outline for the nuclear C\textsuperscript{2} was first formally outlined in the draft nuclear doctrine of the first NSAB which had devoted a full section on this subject.\textsuperscript{lxx}

Secondly, in 1999, as a follow-up to summary dismissal of Chief of Naval Staff Admiral Vishnu Bhagwat for “defiance of civilian authority,” the minister of defense had set up a committee under former minister of state for defense, Ar-
jun Singh, to review higher management of national defense. This committee recommended for an expanded Chiefs of Staff Committee headed by a permanent Chair as Chief of Defense Staff as also for a Procurement Executive to oversee weapons selection and purchase negotiations. The fourth India-Pakistan War in 1999 in the Kargil sector of their Line of Control (LoC) – that was first Indo-Pak war in the nuclear context – also provided the critical backdrop for this comprehensive review of national security system. On April 17, 2000, this led to the setting up of a Group of Ministers (GoM) committee. The GoM also supported creation of CDS in the name of ‘jointness’ and ‘prioritization’ amongst three Services as also for greater efficacy and efficiency. The GoM’s report also recommended that army, navy and air forces also draw up their own blueprints for their operational C\(^2\) for the nuclear forces.

Experts have also written extensively on costs and technical requirements and two national command posts – one outside Delhi and one somewhere in the vicinity of Prime Minister’s Office in the heart of Delhi. These are believed to be in place since last few years.\(^{lxxi}\) However, the chief weakness of this infrastructure lies in the fact that none of these key C\(^2\) facilities is hardened and designed to operate in a nuclear environment.\(^{lxxii}\) Besides, susceptibility of capital city to decapitating strikes must be taken into account and all C\(^2\) elements provided with fail-safe redundancy; pre-delegation of control may be resorted to so that retaliation is guaranteed.\(^{lxxiii}\) Also, since the authority to release nuclear weapons resides in the person of Prime Minister, there will always be a dilemma of having very limited time to shifting him/her to one of these C\(^2\) facilities and also not doing so prematurely as that would send dangerous singles unleashing crisis where one could have been avoided.\(^{lxxiv}\)

As follow-up to the nuclear draft doctrine of 19 August 1999, and from the recommendations of the GoM, India’s National Command Authority (NCA) was constituted by the Cabinet Committee on Security (CCS) on 4 January 2003. It was proposed to be the model Agency for all nuclear C\(^2\) and other ‘operational’ decisions regarding nuclear weapons and their delivery systems. The NCA is conceived as the sole agency to authorize all ‘employment’ of nuclear weapons and their delivery systems. It comprises of a Political Council at the Apex which is supported by an Executive Committee. While the Political Council is chaired by Prime Minister, the Executive Committee is chaired by the NSA (See Chart 4.1). At the operational level, Indian NCA has created a tri-Services Strategic Force Command (SFC) for integration of India’s nuclear forces in possession of various arms of Indian forces. Currently, Commander-in-Chief of the SFC reports to Chairman of Chiefs of Staff Committee (COSC) as the position of the Chief of Defense Staff (CDS) has not yet been filled. It is the CDS who is to be the Operational Head of India’s nuclear forces in time of crisis.

**Offices of NSA and CDS**

Even a cursory look at India’s nuclear C\(^2\) structures makes it obvious that the innovation of National Security Advisor (NSA) has been the most powerful new official position ever created in India’s history. Though repeated attempts have been made to review, NSA’s influence and authority still continues to carry wide rang-
ing executive responsibilities in the area of foreign policy, intelligence, nuclear C^2 as also long-term strategic planning. Especially, within the nuclear C^2 structures, NSA emerges as the powerful link between the political and the military-bureaucratic-intelligence elite. Even though, successive four NSAs have become successively less powerful than visualized in the original NCA formulations, each individual has for sure made a noticeable difference in wielding influence in decision-making. While the first NSA was also the Principal Secretary to the Prime Minister, the third NSA was promoted from below (formerly Deputy NSA). Again the fourth NSA appointed in January 2010 is a career diplomat who was promoted to become Foreign Secretary in 2004 by superseding 16 of his senior colleagues.

It is also interesting to note that with this shrinking of their institutional position; the visibility of NSAs has increased overtime. Each next NSA has been ever more visible and vocal and available for public commentaries. In practice, however, a decade of four NSA is seen to having had only mix results and there have been calls for further refinement and delineation of his role and responsibilities. There have also been questions as to whether NSA’s role should not be confined to foreign policy and whether his being accountable only to the Prime Ministers suffices traditions of parliamentary democracy. Meanwhile, the political elite continues to call the shots in peace times and much of critical decision happen still in the old format of Cabinet Committee on Security (CCS) or Cabinet Committee on Political Affairs (CCPA) meetings where attendance of top political leaders often depends on Prime Minister’s comfort levels with those to be invited.

Second bold innovation remains the position of the CDS. However, this formulation has been clearly undermined by actual practice and lack of consensus amongst the services. Over the years, the debate on CDS has also become dormant and unclear. Besides, even in the NCA formulations, it remains unclear whether the SFC, which is expected to report to CDS (currently to CoAS), puts CDS under the NSA and whether even in operational decisions CDS becomes part of NSA’s expanded responsibility. Again, given the experience of last three NSAs, their visibility in media is likely to encourage the recent new trend of military leaders accessing media to convey their sentiments in public which had not been the case until 1990s. Similarly, the role of the Prime Ministers’ Office (PMO) that has a finger in every pie of Union Government’s decision-making, remains unclear and undefined. Prime Minister’s effective control and participation would demand Prime Minister’s Office being part of formal C^2 structures.

**Assessment & Conclusion**

The most glaring limitation of India’s nuclear C^2 remains the fact that even after 11 years of its creation, it continues to only explain and defend decision taken at the Cabinet Committees which is fair yet alludes only to its fire-fighting orientation. This means that India’s nuclear C^2 remains devoid of any long-term planning or assessment which becomes an imperative as India’s global clout grows making NSA play interlocutor in India’s major initiatives with major powers.

Secondly, there is also this debate about the absence of a well-publicized or clear line of political succession and/
or military chain of command for both nuclear command and alternate nuclear command centers.\textsuperscript{lxxvii} Clearly, in a parliamentary democracy Prime Minister’s successor cannot be pre-nominated by legislation. It is the leader of the house who is invited by the President and sworn in as Prime Minister. Alternately, a person can be so sworn in either for the interim or with a condition to prove his majority in the lower house of Indian parliament within a stipulated time limit. Thirdly, the current C\textsuperscript{2} also assumes that Prime Minister will have the final authority to press the nuclear button without any clarification whatsoever about contingencies like Prime Minister’s assassination. There may not be time enough to call the legislators to elect the new leader of Parliament and prepare for swearing in at the Presidential palace in time. As a result, going by the slow speed of setting up the systems outlined in the NCA since 2003, all this seems too ambitious and does not infuse confidence in the efficacy of India’s nuclear deterrence capability.\textsuperscript{lxviii}

And finally, what makes tasks of India’s C\textsuperscript{2} a nightmare is that all the assets of India’s nuclear deterrence also remain scattered all over. This may be an ingenious way of ensuring efficacy of ‘recessed’ deterrence that may be seen suiting our current level of technologies and organizational structures; yet it does not ensure efficient and credible C\textsuperscript{2}. For instance, in this case of as-yet-divided controls on nuclear assets while the weapons core remains with the AEC, weapons assemblies remain in possession of the DRDO and the delivery systems with the respective services with each flexing in their turf wars and often working at loggerheads with each other. This makes coordination amongst the political, military and scientific leadership itself an uphill task. Besides, coordination amongst these organs also remains critical for effective and cost-effective management of nuclear deterrence stability.

In short, there still remain critical gaps and confusion about the nuclear C\textsuperscript{2} structures of India. This lack of transparency and accountability in this top-heavy set up with myriad committees threatens to emerge as something antithetical to the culture of C\textsuperscript{2} systems. And camouflaging these lacunae in the clock of State secrecy or in the sacred name of national security imperatives has to be balanced with the need for generating popular confidence in India’s C\textsuperscript{2} and in its nuclear deterrence vis-à-vis its real or perceived adversaries.
CHAPTER FIVE:

Pakistan’s Nuclear Command Authority

The Army, Allah (Islam), and America – in that order – have been seen as critical when it comes to debating the decision-making in Pakistan.\textsuperscript{lxxx}

Lately, of course, the voice of Awaam (people) has also begun to make the difference and media, especially electronic media, has often triggered public debates (even popular agitations) on issues of national importance. The rise of media and civil society in last two decades has compelled Pakistan-watchers to begin to revisit their time-tested stereotypes. But when it comes to Pakistan’s nuclear C\textsuperscript{2} debates, most discourses remain yet inconclusive on the larger question of people’s participation in decision making. There are even skeptics who question as to whether one would wish the military or the political leadership to be in control and at the apex of Pakistan’s C\textsuperscript{2}.

First and foremost, experts believe that unlike in the case of mature democracies though civilian control of the military remains desirable yet, in case of Pakistan, the military is likely to exercise a far more effective control over nuclear weapons.\textsuperscript{lxxi} Others go a step further and emphasize that there is no precedent in Pakistan of civilian control over the military establishment which include nuclear weapons.\textsuperscript{lxxi} Theories like those of democratic peace, therefore, continue to be questioned and/or explained in terms of how these do not apply in cases of fledging or nascent democracies; that only mature democracies ensure mutual peace. This is often cited to explain why civilian leaders in Pakistan have been far more prone to propitiating military misadventures. Debates on how civilian leaders have often had but little knowledge (let alone control) on national nuclear assets or policies remain divided to say the least. There have been though phases when things appear to be changing.

Second and most glaring gap in case of Pakistan’s C\textsuperscript{2} remain the absence of a declared official nuclear doctrine which normally provided the guidelines or the functioning principles of C\textsuperscript{2} and allude to the visions of nuclear decision-making. The law passed in March 2010 setting up Pakistan’s National Command Authority (NCA) is one detailed document which is cited as source for inferring their nuclear doctrine. Third and increasingly decisive factor remains the resurgence of radical forces in Pakistan. More disconcerting, there have been some scary admissions by Pakistani leaders about “Taliban trying to take over the State of Pakistan.”\textsuperscript{lxxxii} Such statements make it really urgent to ensure safety and security of Pakistan’s nuclear assets and to widely publicize as to who remains in command of Pakistan’s nuclear decision-making. Pakistani elite has been aware of such expectations and its nuclear C\textsuperscript{2} is one area where Pakistani authorities “have been most public, presumably to reassure both internal and international observers.”\textsuperscript{lxxxiii}

Even after publication of the March 2010 law establishing NCA, Pakistani debates on these issues do not provide much clarity in understanding the nature and scope of Pakistan’s nuclear C\textsuperscript{2}. Considerable uncertainty continues to engulf various narratives in terms of evolution of these struc-
tures which have been in the making for a long time. General Aslam Beg, for example, was reported to having talked about Pakistan having created a National Nuclear Command Authority as early as in 1970s at the Army Headquarters in Rawalpindi, at their Joint Operations Center. In this, the decision-making was to include the President, Prime Minister, the Army Chief and three other people. Again in early 1990s, General Sunderji had referred to a Pakistani Army Chief claiming that a National Nuclear Command Authority had been set up in Pakistan comprising of President, Prime Minister, Chief of the Army Staff, chiefs of the Navy and Air Staff and Dr A.Q. Khan as its members.

There is, of course, one area where Pakistan’s nuclear decision making remains absolutely clear minded: Pakistan’s nuclear deterrence remains all geared to deal with its one paramount threat to its national security, i.e., India. No other country or entity is seen as target of Pakistan’s nuclear deterrence. Amongst various speeches and writings that have appeared from various retired generals and academics, Pakistan seems to define its nuclear doctrine unofficially and in terms of broad four thresholds for its employment of nuclear weapons. Of these, the version provided by Lt Gen Khalid Kidwai, Chief of Strategic Planning Division, remains one most debated. Gen Kidwai is quoted having said that in case of Pakistan “the nuclear weapons are aimed solely at India.” This alludes to how, even when civilian leadership may have been occasionally accommodating, it is the military that remains traditionally the agency responsible for most of nuclear decision-making.

Civil-Military Relations

Pakistan’s initial most debates for developing a nuclear deterrence go back to late 1960s and to the person of Zulfikar Ali Bhutto. It was in early 1970s that he had formally commissioned a white paper on national defense which underlined the need for an active role of civilian leadership in defense planning. This was in tune with his 1973 Constitution that had strongly “supported the principle of civilian control of the armed forces and even introduced harsh penalties to those challenging it.” It created Prime Minister as the chief executive responsible for national defense and created a Defense Committee of Cabinet (DCC), chaired by Prime Minister, as the most important body in the entire structure of defense administration. In 1976, Bhutto established Joint Chiefs of Staff Committee (JCSC) to make military subservient to civilian leadership. Though President Zia-ul-Haq (1977-1988) continued with some of Bhutto’s institutions yet, Army was soon to re-establish its supremacy in national defense decision-making. General Zia’s period witnessed rise of Inter Services Intelligence (ISI) – which works under Army Chief – beginning to meddle into national politics and foreign affairs. And nuclear policy in India and Pakistan has normally been seen as part of foreign policy.

Though political uncertainties since mid-1985 had sustained indirect military control over Pakistani politics yet, the post-Zia decade witnessed the longest period in the history of Pakistan when military was not in power. This period once again witnessed revival of efforts for ensuring civilian control over matters of national defence. The mo-
mentous period of rule by Prime Minister Nawaz Sharif that witnessed (a) overt incorporation of nuclear weapons and (b) his authoritarian style seemed was to turn tables in favor of civilian control of Pakistani armed forces. Sharif made civilians like Dr A Q Khan central to decision-making in matters nuclear.

But then Prime Minister Nawaz Sharif was soon to find himself at loggerheads with most institutions – Army, Presidency, Judiciary – and finally Pakistani retreat in 1999 Kargil War left little choice for military but to once again take over the reins of Pakistani State. Military coup of October 1999 brought General Musharraf to power and this was followed by almost another decade of rule by a General who was subsequently elected as President of the Islamic Republic. However, nuclearization of Pakistan had now increased international community’s stakes and scrutiny about Pakistani internal affairs. As a result, Army has since been seen as reluctant to directly intervene and take over political power and it prefers to be in control from behind the curtains. As regards their nuclear assets, President Musharraf had formally announced in 2007 that Pakistani weapons were kept ‘dis-assembled’ which is understood to mean that warhead have been kept separate from ballistic missiles and other carriers. This, not only very much resembles the Indian situation, but has also sustained the essential ambiguity about Pakistan’s C² though in the nuclear context this ‘ambiguity’ seems to have outlived its case and now threatens to become increasingly counterproductive.

**Pakistan’s post-1998 C² Structures**

It is well recorded today that Pakistan’s nuclear C² apparatus was complete-ly metamorphosed during 1999-2001. As first army chief to assume power after Pakistan became an overt nuclear weapons state, General Musharraf had both the motivation and the means to carry out this reformation. One of his first official decisions was for reorganization of the military bureaucracy within the General Headquarters (GHQ). He ordered the creation of a Strategic Plan Division (SPD), which had commenced working from December 1998, though not formally under that name until early next year. The Sharif government had previously tasked Army to prepare a new command-and-control arrangement. In April 1999, Musharraf had submitted that plan for a NCA, with SPD as its secretariat. This was to take charge of operational, financial and security controls over all strategic organizations. The SPD – that is now the core of Pakistan’s C² structures – was created as a combination of the existing directorate of the Combat Development Directorate (CD Directorate), along with two new ones – the Operations and Plans Directorate and the Command and Control and Intelligence Directorate – into the now officially designated Strategic Plan Division within GHQ.

After General Musharraf seized power as the chief executive in October 1999, he created a National Security Council (NSC), a reform that Nawaz Sharif had previously refused COAS General Jehangir Karamat. The NSC for the first time formalized the role of the military in Pakistan’s policymaking machinery; serving as ‘a forum for consultation on strategic matters…’ At least partially, it was his military engagement with India in Kargil sector and his follow up military coup that had delayed the creation of the new NCA that was finally approved by
Pakistan’s National Security Council on 2 February 2000. Briefly, this NCA of Pakistan was to be responsible for “policy formulation and to exercise employment and developmental controls over all strategic forces and strategic organizations.”

In its new formulation, it consists of (a) Employment Control Committee (b) Development Control Committee and (c) Strategic Plans Division as its critical components (See Chart 5.1).

It is interesting to note that the announcement of NCA had stipulated that both the Employment Control Committee (ECC) and Development Control Committee (DCC) will be chaired by ‘the head of the government’ – a term that allows flexibility for interpretation, depending on whether Pakistan is in a period of presidential, parliamentary, or military rule. Also, while including significant civilian leaders, NCA clearly weighs heavily in favor of military advisors which conform to the continued military dominance in Pakistan’s nuclear weapons program.

Even now the March 2010 NCA law makes Prime Minister as Chairman of NCA, it underlines the fact that Chair, in consultation with NCA, can delegate all its powers and functions to the Chairman of the Joint Chiefs of Staff Committee (CJCSC) as also to the Director General of the SPD and does not ask for any political line of succession.

To briefly describe these structures, it constitutes of two committees: The Employment Control Committee (ECC) and the Development Control Committee (DCC). The ECC includes the head of government (as Chair) and has foreign minister as deputy chairman, and defense minister, interior minister, Chairman of the Joint Chiefs of Staff Committee, service chiefs, director-general of the Strategic Planning Division (as secretary), technical advisors, and others as required by the chairman. The DCC is also chaired by the head of the government as Chair though it has the Chairman of the Joint Chief of Staff Committee as its deputy chairman. Also, it includes the service chiefs, the director-general of the Strategic Planning Division, and representatives of the strategic organizations and community – presumably including scientists and intelligence advisors. This committee is the one responsible for nuclear plans and procurement. Accordingly, it is dominated by military advisors to a far greater extent than the ECC.

And finally the Strategic Plans Division (SPD) that was created as a Secretariat for the NCA in February 2000 is to be headed by a senior army officer. Lt Gen Khalid Kidwai has been its head since its very inception and it is interesting to note that Lt Gen Kidwai had already received his third extension for year 2009. Several experts in the US consider Lt Gen Kidwai as solely responsible for the safety of Pakistani nuclear assets. The SPD is established in the Joint Services Headquarters at the traditionally known safe-zone of Chaklala under the Chairman of the Joint Chief of Staff Committee. The Director of SPD does all the planning and coordination in the nuclear C² establishment under the oversight of the NCA.

In this original picture of NCA, the March 2010 Law establishing the Pakistan NCA has further clarified several uncertainties. Firstly, it makes it amply clear that it is not President but the Prime Minister who will be the Chairman of the NCA. According to NCA Law, all the powers and functions shall rest with the NCA on whose
behalf; the chairman will exercise these powers and functions. It is interesting to note that Chairman, in consultation with the NCA and subject to such limitations as he may specify, may delegate any of powers and functions to the CJCSC and the director-general, SPD, who may further sub-delegate the same to any NCA employee. Therefore, in comparison to the heavy-weight position of a civilian NSA in India, the new law in Pakistan, makes it amply clear that the Chairman Joint Chiefs of Staff Committee (CJCSC) has been assigned a significant role in the NCA while the President of Pakistan, despite being the supreme commander of the armed forces under the Constitution, does not even figure in C2 structures. So the 2010 NCA law surely has made several substantial changes in the ordinance that was promulgated by Pervaiz Musharraf on 13 December 2007.xciv

**Pakistan’s No-First Use Debate**

The fundamental dichotomy of civil-military relations has been equally glaring when it comes to defining Pakistan’s nuclear doctrine that ideally provides the roadmap for a country’s nuclear C2. On expected lines, while the military has been largely in favour of promoting First-Use doctrine, various civilian leaders have consistently eluded to preferring No-First Use doctrine. As recently as in a conference in Islamabad during July 2010, Maria Sultan, the Director General of Islamabad-based South Asian Strategic Stability Institute (SASSI) sought to present a “new theory of integrated strategic equivalence” which outlined “Pakistan’s possible countermeasures” to India’s conventional war Cold Start Doctrine where she prescribed “use of sub-critical or fourth generation nuclear weapons, as measures for creating intra-war deterrence” which is projected as Pakistan’s answer to India’s possible attempts at pre-emption.xcv Views like these have always been highlighted and debated by various army leaders. To quote Lt Gen Sardar Lodhi on the subject –

> During any future Indo-Pak armed conflict, India’s numerical superiority in men and conventional arms is likely to exert pressure beyond endurance. In a deteriorating military situation when an Indian conventional attack is likely to break through our defenses or has already breached the main defense line causing a major set-back to the defenses, which cannot be restored by conventional means at our disposal, the government would be left with no other option except to use Nuclear Weapons to stabilize the situation. India’s superiority in conventional arms and manpower would have to be offset by nuclear weapons. The political will to use nuclear weapons is essential to prevent a conventional armed conflict, which would later on escalate into a nuclear war. Pakistan’s Nuclear Doctrine would, therefore, essentially revolve around the first-strike option.xcvii

But given that the focus of this study remains primarily on political apex of Pakistan’s C2, except for a brief initial period after its nuclear tests in 1998 and also during the Kargil War of 1999, the official statements about Pakistan’s nuclear policies had been generally conciliatory, moderate and reassuring. Pakistan has been tightening nuclear export controls. Speaking at the Carnegie International Non-Proliferation Conference on 18th June 2001, Pakistani foreign minister, Abdul Sattar had even proclaimed that Pakistan had a “no first use of force” policy.xcviii But India-Pakistan military showdown during 2001-2002 (Operation Prakram) had also pushed Pakistan on the
defensive and these formulations of NFU disappeared for a brief while. Hawks in Pakistan consider NFU doctrine equal to granting India impunity to fight conventional wars. Over the years, therefore, these NFU formulations have expanded and interpreted to mean continuation of Pakistan’s old proposal of a ‘No War’ Pact banning application of both conventional and nuclear forces.\(^{xviii}\) From Pakistan’s highest level, the same NFU sentiment was once again echoed in the much debated statement by President Zardari during the Leadership Summit of Hindustan Times in Delhi in November 2008.\(^{xcix}\)

This was the context which witnessed Lt Gen Kidwai informally, but publically, articulating a series of ‘nuclear faultlines’ suggesting circumstances in which Pakistan’s C\(^2\) will legitimately resort to pressing the nuclear button.\(^{c}\) These include (a) the space threshold, i.e., if India attacks and conquers large part of territory, (b) military threshold, i.e., if India were to destroy large part of land/air forces of Pakistan, (c) economic threshold, i.e., if India proceeds to economic strangulation, and (d) the domestic destabilization threshold, i.e., if India pushes Pakistan into political turmoil or creates large scale internal subversion. At what stage and who in Pakistan would provide the interpretation to whether any of these thresholds has been breached remains unclear as yet. The result is that the C\(^2\) set up of Pakistan appears to be highly vulnerable to a whole range of multiple pressures to ensure effective ‘employment’ of nuclear weapons.

Indeed, it is only by applying conventional nuclear wisdom of East-West relations that conventional superiority of India is expected to automatically result in Pakistan opting for a First-Use nuclear doctrine. India’s deep-rooted suspicions about Pakistan only further re-enforce such perspectives. However, this clearly goes against the grain of their physical proximity where collateral damage to self remains too easy to be realized. Also, the fact that it would require Assured Destruction capability to carry out a ‘decapitating’ first strike remains overlooked by such conventional arguments. Ideally, nuclear First-Use would require a nuclear triad capability including nuclear assets at sea. Though initially Pakistan had set up a ‘Strategic Directorate’ at its Naval Headquarters and publicized its aspirations of buying nuclear-powered submarines (from France and/or China) and there had even been reports about Pakistan building ship based nuclear missiles, yet its aspirations ‘remain far more limited.’\(^{ci}\)

It is in this context that ever since President Zardari said “We will most certainly not use it first” at the Hindustan Times World Leaders Summit in November 2008 and the inferences about Pakistan’s nuclear doctrine have also expanded to include discussion on its ‘No-First Use’ formulation.\(^{cii}\) After all, in terms of its C\(^2\) procedures, apart from its nuclear weapons capabilities, such ‘First Use’ thinking would require Pakistani C\(^2\) to be more Delegative, leaning heavily towards the ‘always’ side of the always/never divide and will require devolution and possibly pre-delegation of launching authority.\(^{ciii}\) Besides, it is not just a matter of lack of capabilities. What incentives or objectives Pakistan could conceive of or to plan a first strike? So, in absence of a clear formal nuclear doctrine, if one has to still try and infer Pakistani thinking, it would be more inclined to No-First Use though (like China and India) this would have multiple qualifiers and interpretations all the time.
In such situations, to err on side of caution is prescribed. Especially, the need for caution against some of the jingoistic inferences cannot be overemphasized. A robust commitment to NFU remains critical for an effective C² to ensure strategic stability in this triangular nuclear relationship. Besides, caution is also necessary given the nature of Pakistan’s political rhetoric that underwrites its responses in crisis situations creating undue pressure and confusion for the political apex of its C². During the Kargil War of 1999, for instance, the fact that Leader of the House in the Senate, Raja Zafar-ul-Haq, and the then Chairman of the Foreign Affairs Committee in the National Assembly, Mian Abdul Waheed were amongst those openly brandishing nuclear weapons threat raises serious questions about the vulnerability of their political apex.²⁴

Well-known Pakistani strategic expert, Dr Shirin Mazari believes that Pakistan would keep its NFU option open.²⁵ US Congressional Report of May 15, 2009, had cited Pakistan developing “hard and deeply buried storage and launch facilities, road-mobile missiles, air defenses around strategic sites, and concealment measures” as proof of Islamabad having make a breakthrough in ensuring survival of its nuclear assets for a guaranteed second strike.²⁶ Juxtaposed with President Zardari’s November 2008 statement, the evolution of Pakistani nuclear arsenals, it is a NFU posture that seems to provide a far more practical guide for Pakistan’s C².

The Threat from Non-State Actors

The real contemporary challenge for Pakistan’s C² comes from non-State actors. Indeed, no nuclear weapon state has ever faced a similar situation; so there are no lessons to be learnt from extant nuclear C² theologies. And worst, in spite of the successive revelations from early 1990s by the International Atomic Energy Agency (IAEA), Pakistan had continued to reject all inferences about its role in covert international transactions of nuclear know-how, technologies and materials. It was only following the US global war on terrorism that President Musharraf finally begun to act on these allegations. As a first major initiative in that direction, two senior members of Pakistani Atomic Energy Commission (PACE) – Sultan Bashiruddin Mahmood and Abdul Majid – were arrested on 23rd October 2001 for their alleged involvement in al-Qaeda’s search for a nuclear weapons capability.²⁷³⁸ Later, on February 4, 2004, of course, the mother of all covert transaction networks in nuclear commerce was finally unearthed with a public confession of Dr A.Q. Khan on television.²⁹

To cite from the most respected name, Lt Gen Khalid Kidwai himself, this had been “the worst-kept secret in town” that should have triggered investigations years earlier.³⁰ According to Kidwai, Director-General of Pakistan’s Strategic Plans Division, Dr A.Q. Khan had masterminded an elaborate and wholly unauthorized smuggling network involving chartered cargo flights, clandestine overseas meetings and a Malaysian factory that reconditioned centrifuge parts discarded from Pakistan’s nuclear programme for sale to foreign clients. He is also known for having supplied to Iran and Libya with surplus, outmoded equipment from his laboratory. Now to believe that the politic apex of Pakistan’s C² remains either unaware or ineffective in dealing with such situation does send
shivers across most spines. But more people now consider it as a closed chapter of Pakistani history and the interest in it remains only academic.

According to David Sanger from his book, *The Inheritance: The World Obama Confronts and the Challenges to American Power*, the greatest threat to Pakistan’s nuclear assets remains the possibility of radical elements recruiting Pakistanis who had been trained in nuclear sciences and engineering abroad and to try and figure out which ones might harbor sympathy for radical Islamic causes. Similarly, an American intelligence report produced for restricted access to very senior US officials in 2008, had reported that few of those scientists appeared to be returning to Pakistan seeking jobs within country’s nuclear infrastructure. The Author has spelled out an important network and gave a reference of American report. The reference of report is missing in the document. He should mention the source of information. In addition, Pakistan has two—Personal Reliability Program and Human Reliability Program for screening the employes of its nuclear establishment. Therefore, this kind of assertion – radical foreign qualified nuclear scientist getting jobs in Pakistan’s nuclear facilities – is erroneous. If Author is convinced with this kind of fears, he has to critically analyze this dimension of threat in the preceding sections on India and China. Both states have been victims of non-state actors’ activities and their nationals have been studying abroad. To quote David Sanger, over the country, and desperately wants to acquire the Bomb.\footnote{cx}

The problem also lies in the way Pakistani efforts at building their nuclear capabilities have been conceived right from early 1970s, i.e., in terms of Islamic Bomb.\footnote{cxii} Its initial formulations are credited to Zulfikar Ali Bhutto and this expression had gradually “come to be used in official and media circles” in Pakistan from early 1980s.\footnote{cxii} This formulation may have brought some financial and political support from Pakistan’s Islamic friends but today it has dire implications with radical Islamic outfits which might find it logical to ask for their share in the bomb in the name of Islam. And these forces have emerged so powerful, especially in northwest of Pakistan, that Pakistan Army finds itself handicapped in confronting them knowing their strengths but more so suspecting that they may have many sympathizers, if not supporters, within Army’s own ranks.\footnote{cxii} The fact that Pakistan does have extensive Personal Reliability Program and Human Reliability Program for screening the employees of its nuclear installations and its armed forces have repeatedly undertaken successful operations in regions like Swat valley and South Waziristan does provide for some confidence yet this reality hard-ly needs stressing the criticality of robust C\textsuperscript{2} in Pakistan to ensure strategic stability and peace of this region.

**Assessment and Conclusion**

In terms of making an assessment, ideally the foremost function of nuclear C\textsuperscript{2} remains to function as a peacetime forum for politico-military apex. However, going by the experience of last decade, Pakistani NCA has remained dominated
by successive military leaders. This perhaps only reflects the history and political reality of Pakistan as a nation where this pervasive influence of army threaten to ignore competing political or bureaucratic advice.\textsuperscript{cxiv} Therefore, in spite of brilliant new formulations by Pakistan’s new March 2010 NCA law; several core elements of Pakistani C\textsuperscript{2} remain ambiguous and blurred. For instance, the March 2010 Law on NCA that stipulates all nuclear decisions to be made by the Prime Minister at its face value appears incongruous with what one knows about Pakistani decision-making. Also, similar to the problems of Indian and Chinese C\textsuperscript{2}, Pakistan also does not have or publicizes the chain of command or any other information about the delegation of powers or alternate personnel or operational centers.

The military-manned SPD as an institution and military leaders like the SPD Director-General and Chief of Joint Chief of Staff Committee have come to be the critical core of Pakistan’s nuclear C\textsuperscript{2}. These are also the components of Pakistani NCA that is believed to have expanded its role in the decision-making, primarily on the basis of their specialization and dedicated work in providing the expertise, information and analysis on matters nuclear. All of these are located at the Joint Services Headquarters under the CJCSC. The SPD, that works as secretariat of the NCA has responsibilities for planning and coordination and for setting up lower tiers of C\textsuperscript{2} and for developing necessary infrastructure. The SPD is believed to have 35 officers who are divided into (a) Operations & Planning, (b) Strategic Weapons, (c) Arms Control and Disarmament, and (d) C\textsuperscript{4}ISR for effective nuclear operations plus for enhancing transparency in decision-making process.

No doubt, Pakistan has put in place robust measures for the management of its nuclear weapons. Like other nuclear weapon states, it screens personnel with nuclear-related duties, operates a “two-person” rule, uses permissive-action-links (PAL) technology to “lock” weapons against unauthorized use, operates authenticating and enabling code systems and has in place multiple layers of physical security around weapons.\textsuperscript{cxv} But it is also interesting that the key players in the C\textsuperscript{2} apex bodies of Pakistan are all selected in consultations with Inter Services Intelligence, Military Intelligence, Intelligence Bureau, and the SPD and not that political leaders make the selection and use these agencies only as a follow up for ensuring the integrity and credentials of selected candidates. Despite this, incidents like Sultan Bashiruddin and Abdul Majeed and later A. Q. Khan continuing to have access to Pakistani nuclear programme, allude to radical elements having access to some of these critical national security agencies. This sends dangerous signals. Indeed, President Musharraf had undertaken thorough corrective measures like re-organisation and/or re-locations of personnel in the fall of 2001 following 9/11 incidents and 2010 NCA law has further consolidated this re-organisation. That these institutional reforms have replaced several flag-rank officers who were believed to be closed allied with Islamist elements has brought some temporary relief.\textsuperscript{cxvi} Nevertheless, threats from non-State actors as also from the political orientation of its key players remain a major challenge for Pakistani nuclear C\textsuperscript{2}, as also for the C\textsuperscript{2} of neighboring China and India which calls for greater transparency and coordination between these three nuclear neighbors.
CHAPTER SIX:

Conclusions and Policy Options

Experts have done empirical studies to prove how nuclear tests by India and Pakistan in 1998 have complicated deterrence equations as also C^2 requirements in Southern Asia. They allude to the fact that between India and Pakistan, the de-facto nuclear period (1989-1998) was considerably more volatile than the non-nuclear period (1972-1989), and that, at least for a brief period, their post-1998 equations had sure become confrontational. That in spite of strong global trends in favor of nuclear disarmament, any possibilities of India and Pakistan returning to nuclear innocence seem only a utopian option, least likely in the near term future. By most estimates, while China’s arsenals remains tied to that of the US and India’s to that of China, Pakistan is expected “to keep pace with India with respect to nuclear modernization programs over the next decade.” The expansion of their small nuclear stockpiles will be driven primarily by their economic growth rates as also by their perceived ‘growing conventional imbalance.’ This can prove to be slow yet this threatens to remain uncertain and slide into an unending escalation spiral.

Sooner or later though these states will begin to appreciate that, having developed extensive and advanced nuclear stockpile, their C^3 remains critical force-multiplier for their simple and small nuclear arsenals as also a barometer for the health of their deterrence-stability. Their C^2, therefore, becomes critical given their track record of repeated crises of brinkmanship and standoffs. More recently, there is increasing focus on threats from non-state actors and increasing turmoil in the domestic politics of all three neighbors, i.e., China, India and Pakistan. This makes it a pre-requisite for them to develop clearer and stronger mutual understanding on their respective C^2 systems. This is because all future threats will require them to cooperate together in creating positive atmospherics for ensuring stable nuclear deterrence equations. And for ensuring strategic stability in their new nuclear triangle they will have to begin by focusing on some of the following initiatives:

- Firstly, transparency and not ambiguity should become the hallmark of their nuclear equations. In the context of Southern Asia, this will facilitate predictability of strategic postures and directly contribute to longer-term strategic stability of this region. This will enhance mutual trust amongst political leaders who form the apex of their C^2 structures.

- Secondly, they must continue to work towards enhancing the rationality of their nuclear deterrence through specific nuclear risk reduction measures. Some of the work in this field has already been done but the pace remains slow, uncertain and vulnerable to both their internal and external events.

- And finally, in view of their complicated nuclear asymmetry, all three (China, India, Pakistan) must encourage processes of interdependence including in civil nuclear cooperation. This will help them in evolving enlightened equation in which a robust C^2 remains the most critical component.

Experts talk of India requiring at least two command posts – the Nuclear
Command Post and the Alternative Nuclear Command Post – but their locations and occupants remain a matter of imagination. Similarly, in terms of delegation of authority, though conception of NCA is borrowed largely from the American model of clear and direct form of administration, its replication in India and Pakistan remains much unclear and indirect. In case of India, for instance, the belief remains that head of political system will take the political elite into confidence before pressing the nuclear button which remains a ‘blind interpretation’ of representative system at best. It is true that crisis escalation in inter-State relations will take some time yet neither side seem to have contingency plans on how their C² will react to a ‘bolt-from-the-blue’ situation of accidental and unauthorized launch which remains a strong possibility at least in India-Pakistan situation. At least till now, China appears less likely to face a trigger happy equation with either India or Pakistan.

And finally, given the nature and destructive power of nuclear technologies, all three sides need to be especially careful as they begin to shift from covert, to recessed, to robust nuclear deterrence involving ‘limited war’ doctrines. Experts continue to express fears about “a scant appreciation of the dangers of shifting from a nonthreatening to threatening postures” which clearly has direct implications for evolution of their nuclear C² formulations and structures. Similarly, given that the nuclear weapons remain more political than military weapons, their C² will have to seek mandate in popular perceptions rather than being exclusively the task for expert executioners on ‘for-your-eyes-only’ basis of sharing information and advice. It would also generate popular confidence in their respective nuclear C² both within these three states as also with the rest of the world.

Continuing Mutual Suspicions

Mutual suspicions remain their enemy number one facing them upfront. Their nuclear triangle makes its unaffordable and can exacerbate chances of unauthorized and unintended launches or such misperceptions. As of now, so much of their mutual understanding and appreciation of their nuclear C² remains in the domain of inferences and insinuations. At the most visible level, while China is believed to have about 400 nuclear warheads, all deployed and ready to shoot, both India and Pakistan are widely accepted to have stockpiles within double-digit figure and held in recessed, i.e., un-deployed deterrence mode. No doubt, India and Pakistan have made some piecemeal progress in evolving their C² structures and formulations yet their challenges have witnessed an exponential expansion. Their risk is seen increasingly coming not from State by non-State actors.

Though China and India have witnessed increasing internal instability and violence, yet case of Pakistan presents relatively serious concerns. In case of Pakistan, three threats are cited as most important: (a) the risk of a counter coup or civil war, (b) the risk of nuclear weapons falling into hands of elements of Pakistan army with extremist Islamic sympathies, and (c) the risk that nuclear weapons will fall directly into the hands of radical political or terrorist organizations such as al Qaeda. The world continues to be concerned about the safety and security of nuclear equations of India and Pakistan and especially about Pakistan’s
nuclear assets. The world also continues to notice that individual like Lt Gen Khaliq Kidwai and General Pervaiz Kayani seem to become indispensable and come to deflect focus away from strengthening institutions. Pakistan meanwhile remains unsure about all possible outsiders – Islamic militants, al Qaeda scientists, Indian saboteurs, even American Special Forces teams that the Pakistanis believe are perpetually bobbing just offshore, refining their plans to snatch Pakistan’s weapons if a crisis erupts.

Bush administration was believed having financed a $100 million project teaching Pakistanis how to lock down their nuclear weapons. US plans for ensuring safety of Pakistani nuclear assets were famously dealt in January 2005 by then Secretary of State, Condoleezza Rice who told Senator John Kerry that “We have noted this problem, and we are prepared to try to deal with it.” Besides, several Pakistani experts have always believed that Pakistan remains “the most US penetrated country with an intensive intelligence network and a lot of influence into the inside working” of Islamabad decision-making institutions.

However, none of these threats can be ignored as only one country’s problems. Nuclear weapons and their social, political, financial, and ionizing radiation “fallouts” cannot be confined to any territorial borders. The increasing sense of nuclear weapons being vulnerable to falling in hands of non-state actors is now increasingly seen as the most critical threat to the 21st Century world. All this calls for greater mutual cooperation and coordination amongst China, India and Pakistan and on the need to evolve local solutions to their security threats and concerns. And, while China, India and Pakistan have developed series of bilateral confidence building measure and nuclear risk reduction measures and also publicized about their nuclear C^2, there remains an urgent need now that they begin to evolve trilateral framework for similar efforts and initiatives.

Conclusion

It is soon after the nuclear tests by India and Pakistan that the Time magazine issue of 7th June 1999 had declared the “Birth of a Superpower” and, in spite of hiccups, the myth about rise of China has continued to thrive. However, US official estimates by the Congressional research (Cox report) had concluded that China remains but a small and essentially a defensive nuclear force. With only 20 ICBMs, 100 IRBMs, and 24 SLBMs, China has only a limited capacity to reach the US mainland and it remains committed not to use nuclear weapons against non-nuclear US allies in the Pacific region. US projects on developing ballistic missile defense systems seem to only further negate China’s nuclear deterrence. But, other than its implications for the US, China’s linkages with new nuclear neighbors (India and Pakistan) have complicated matters making their nuclear triangle a unique challenge for their C^2 as also for C^2 formulations in general. In many ways, this nuclear triangle seems to open a new chapter in nuclear discourses with lessons for other regions and nuclear weapons powers.

Of these, China’s C^2 is the oldest and has controlled larger nuclear arsenal for longer years and this makes it of interest in both India and Pakistan. But unlike most organizations in India and Pakistan,
China’s C² apparatus remains highly centralized, vertically structured, and very personalized. It has been known for its obsession with secrecy and misinformation. However, the leader of China’s fourth generation leadership, Hu Jintao, has established his reputation for favoring transparency. Starting from the time when he came into limelight, he managed to do so even at the cost of his equations with his predecessors. And this seems to go very well with China’s new ‘only child’ 21st Century power elite. Both India and Pakistan also seem to follow China’s example and have been expanding openness and publicizing information.

In the end, these efforts at expanding transparency remains an essential imperative for China, India and Pakistan, all three of whom have failed to overcome their continuing mutual suspicions which seems to be getting entangled with rising threats from non-state actors. Radiological devices being pursued by radical outfits like Al Qaeda make task of their C² really challenging. Such fissile materials and sources are, for example, used all over the world for a wide range of peaceful purposes, including smoke detectors, medical devices, meteorology, mining, thermoelectric generators and in medicine and agriculture sectors. There are at least 8 million identified radiological sources in use worldwide. Their small size and probability of high value make them vulnerable to misuse and theft yet, the IAEA had reported 272 cases of illicit trafficking in sealed radioactive sources between 1993 and 2002.

As China, India and Pakistan mature as states with nuclear weapons, it calls for increasing transparency about their nuclear C² structures as also for increased trilateral cooperation and coordination amongst the political apex of these C² structures.


xvii. Such dynamism calls for political leadership to be regularly trained about con-
stantly changing procedures, launching codes, update information and commu-
nications methodologies. In US, for instance, President uses encrypted electronic
codes to authorize and enable nuclear weapons and he is always accompanied
by a military aid carrying a briefcase and a 75-page black-book of targets.

xviii. Valery E. Yarynich, Nuclear Command, Control, Cooperation, (Washington

xix. Valery E. Yarynich, Nuclear Command, Control, Cooperation, (Washington

xx. Bruce G. Blair, Strategic Command and Control, Redefining the Nuclear Threat,

in South Asia”, in Nonproliferation Review, Spring-Summer 1999, p. 25. He
highlights how experts in South Asia assume that given their small and simple
arsenals they do not require too extensive and sophisticated command and con-
trol establishment. Also see Kamal Matinnuddin, The Nuclearization of South

xxii. for history of this triangle see Ashok Kapur, “The China-India-Pakistan Strate-
gic Triangle”, Aakrosh: Asian Journal on Terrorism and Internal Conflicts (New

xxiii. Reshmi Kazi, “The Danger of Nuclear Terrorism: The Indian Case”, Strategy
Analysis (New Delhi), Vol. 33, No. 4 (July 2009), p. 505; Nair, Vijai K., “South
Asia: Scope of Nuclear Terrorism – Policy Imperatives”, in Aakrosh: Asian
Journal on Terrorism and Internal Conflicts (New Delhi), Vol 10, no. 35 (April
2007), p. 84. This article examines in detail the possibilities of nuclear terror-
ism and how organization like Al Qaida have already obtained the ‘capabil-
ity and intent to develop and employ a radiological dispersal device’ (p. 90);
also Nair, Brig Vijai K., “Nuclear Terrorism: Threat and response”, Defense and
Technology, (New Delhi), Vol. VI, no 60 (July/August 2007), pp. 64-73.

xxiv. Samina Ahmed and David Cortright, “Going Nuclear: The Weaponization Op-
tion”, in Samina Ahmed and David Cortright (eds.), Pakistan and the Bomb:
Public Opinion and Nuclear Options, (Notre Dame, Indiana: University of

Ventures – India’s Military Development Should Be Watched Out For”, Libera-
May 23 1998.

xxvi. Swaran Singh, “The China Factor in South Asia’s Nuclear Deterrence” in E.
Sridharan (ed.), The India-Pakistan Nuclear Relationship: Theories of Deter-

xxvii. Ming Zhang, China’s Changing Nuclear Posture: Reactions to the South Asian
Nuclear Tests, (Washington DC: Carnegie Endowment for International Peace,
1999), p. 45.

xxviii. Ikram-ul-Majeed Sehgal, “Nuclear CBMs between India and Pakistan: Utilitarian
Military Relations, Strategic Context, and the Stability of Nuclear Deterrence

xxix. Scott Douglas Sagan, Inside Nuclear South Asia, (Stanford: Stanford University Press, 2009), p. 250. India had qualified its NFU on 4th January 2003 when its announced setting up of its National Command Authority. It now believes that any attack on India involving Weapons of Mass Destruction (WMD) which include nuclear, chemical and biological weapons will trigger a nuclear response. Such response will also be justified as response to similar attack on Indian armed forces anywhere in the world. Similarly, China’s NFU is interpreted to be subject to its effect only on territories that it consider ‘foreign’ which raises the question of possible nuclear use on territories it considers part of China e.g. Taiwan or Arunachal Pradesh in India.


xxxii. for details see George K. Tanham, Indian Strategic Thought: An Interpretive Essay, (Santa Monica, California: RAND, 1992), R-4207-USDP.


xxxvii. Admiral L. RAmdas (Rtd.), “Myths and Realitis of Nuclear Command and Control in India and Pakistan”, Disarmament Diplomacy, Issue No. 54, Febru


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lxviii. Rahul Bedi, “India’s security gap”, Jane’s Intelligence Review, Vol.8 no.3, (March


lxxvii. Raja Menon, “Nuclear Doctrine in South Asia”, in P. R. Chari, Sonika Gupta and ArpitRajain (eds), Nuclear Stability in Southern Asia, (New Delhi: Manohar, 2003), p. 113. The succession List of US President, for instance, remains well-publicized and known. This consists of Vice President; Speaker of the House of Representatives; President pro-tempore of the Senate; Secretary of State; Secretary of Treasury; Secretary of Defense; Attorney General; Secretary of the Interior; Secretary of Agriculture; Secretary of Commerce; Secretary of Labour; Secretary of Health; Secretary of Transport; Secretary of Energy; Secretary of Education in that order. His succession list in the NCA consists of Deputy Secy of Defense; Secretary of Army; Secretary of Navy; Secretary of Air Force; Undersecretary of Defense for Research & Engineering; Under Secretaries of Army, Navy & Air Force (in order of length of service); Assistant Secretaries of Army, Navy & Air Force (in order of length of service) in that order.


lxxxi. Mazhar Aziz, Military Control in Pakistan: The Parallel state, (London: Rout-
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ledge, 2008), p. 53.


lxxxv. Nadeem Iqbal, “Economic threat may push Pakistan to go nuclear”, Asia Times (Hong Kong), February 6, 2002.


xcix. Vinod Sharma and Zia Haq, “There is a bit of India in every Pakistani: Zardari”, Hindustan Times (Delhi), 22 November 2008, p.1.


In the American system the Constitution Art 1, Section 8, clause 14 provides Congress with the power “to make Rules for the Government and Regulation of the land and naval Forces” but this is where mandates of the Congress to regulate the control and direct the use of nuclear weapons by its armed forces ends. All decision to employ nuclear weapons rest with the President and neither Congress nor State governments need to be consulted. Given that contingencies that require employment of nuclear weapons do not offer much time, the Presidential Decision Directive 2000 outlines policy of measured response against any perceived enemy has included instances that include uses or planning to use, chemical or biological agents. Similarly, the Nuclear Posture Review 2002 outlines US first ‘pre-emptive’ strike policy of ‘contingency plans’ for not only ‘axis of evil’ (Iraq, Iran, Syria, N Korea) but also countries like Russia and China.


Michael D Swaine, The Military & Political Succession in China: Leadership,
Institutions, Beliefs, (Santa Monica, CA: RAND R-4254-AF, 1992), p. 122.

cxxx. Yu Bin, “The Fourth-Generation Leaders and the new Military Elite”, in David Michael Finkelstein and Kristen Gunness (eds.), Civil-Military Relations in Today’s China: Swimming in a New Era, (London: M E Sharpe, 2007), pp. 78-88. Hu’s sacking of Health Minister Zhang Wenkang and Beijing Mayor Meng Xuenong for underplaying SARS figures on 20 April 2003 and his publicizing of the submarine accident on 4 May 2003 involving death of about 70 sailors had come as a sensation about his style of leadership and were widely expected to cost him his equations with his predecessor Jiang Zemin who was known for his cautious style.