

Military readiness is perhaps one of the least studied and understood concepts in the field of strategic studies. In the absence of any significant literature in the public domain, defence policy makers and practitioners worldwide tend to define military readiness in several different ways. This often results in readiness assessments that are either too narrow or too broad. An analytical framework to assess levels of military readiness at the national level against well defined criteria therefore becomes a critical policy imperative.

Establishing India's Military Readiness Concerns and Strategy

HARINDER SINGH

Institute for Defence Studies and Analyses

No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel.: (91-11) 2671-7983 Fax: (91-11) 2615 4191
E-mail: contactus@idsa.in Website: <http://www.idsa.in>



idsa
INSTITUTE FOR DEFENCE
STUDIES & ANALYSES

Brig Harinder Singh is currently commanding a Brigade in the Western Sector. At the time of writing this monograph he was Research Fellow at the Institute of Defence Studies and Analyses (IDSA), New Delhi, India. His research interests include India's military readiness concerns and strategy, and counter-insurgency concepts and practices. He has been an International Graduate Fellow at the Asia Pacific Center for Security Studies (APCSS), Honolulu, Hawaii (USA) and a Senior Visiting Fellow at the S. Rajaratanam School of International Studies (RSIS), Singapore.



IDSA Monograph Series

No. 5 November 2011

**Establishing India's Military Readiness
Concerns and Strategy**

Brigadier Harinder Singh



**Institute for Defence
Studies & Analyses**

© Institute for Defence Studies and Analyses, New Delhi.

All rights reserved. No part of this publication may be reproduced, sorted in a retrieval system or transmitted in any form or by any means, electronic, mechanical, photo-copying, recording or otherwise, without the prior permission of the Institute for Defence Studies and Analyses (IDSA).

ISBN: 81-86019-95-2

Disclaimer: It is certified that views expressed and suggestions made in this Monograph have been made by the author in his personal capacity and do not have any official endorsement.

First Published: November 2011

Price: Rs. 300/-

Published by: Institute for Defence Studies and Analyses
No.1, Development Enclave, Rao Tula Ram Marg,
Delhi Cantt., New Delhi - 110 010
Tel. (91-11) 2671-7983
Fax.(91-11) 2615 4191
E-mail: idsa@vsnl.com
Website: <http://www.idsa.in>

Cover &

Layout by: Geeta Kumari

Printed at: M/s Printline
H-10, IInd floor, NDSE-I
New Delhi - 110049
Tel: (91-11) 24651060, 24643119
Email: printline2003@yahoo.co.in

Contents

<i>Acknowledgements</i>	9
<i>Summary</i>	11
1. Introduction	17
a. Aim	
b. Structure	
c. Methodology	
Part-I: The Concept and Expression	
2. The Problem Of Military Readiness	29
a. Definitional Dilemma	
b. Locating The Readiness Debate	
c. Ambiguity In The Indian Context	
3. The Fundamentals of Military Readiness	49
a. Concept Of Readiness	
b. Components And Contending Expressions	
c. Understanding Its Importance In The Indian Context	
4. Military Readiness in Modern Militaries	60
a. United States	
b. United Kingdom	
c. People's Republic Of China (PRC)	
d. Australia	

Part- II: India's Military Readiness Concerns

- | | |
|---|-----|
| 5. Establishing India's Security Concerns | 73 |
| a. Environment | |
| b. Challenges and Threats | |
| c. Imperatives and Implications | |
| 6. Matching Concerns with Aspirations | 89 |
| a. The Indian Army | |
| b. The Indian Air Force | |
| c. The Indian Navy | |
| 7. Limitations and Hurdles | 103 |
| a. Policy and Planning | |
| b. Capability Development | |
| c. Institutional Structure and Culture | |

Part-III: India's Military Readiness Strategy

- | | |
|--|-----|
| 8. Forging India's Hard Power in the New Century | 117 |
| a. Strategic Opportunities in the Indian Context | |
| b. Key Threats: Immediate and Foreseeable | |
| c. Readiness Challenges | |
| 9. Formulating India's Military Readiness Strategy | 129 |
| a. Broad Approach | |
| b. Strategising the Concerns | |
| c. Synchronising The Readiness Strategy | |

10. Managing the 3Ms of Military Readiness	148
a. Money	
b. Manpower	
c. Material	

Part-IV: Major Lessons and Recommendations

11. Major Lessons	167
a. Concept and Expression	
b. India's Military Readiness Concerns	
c. India's Military Readiness Strategy	
12. Recommendations	176
a. Defining the Metrics	
b. Fixing the Measurement Standards	
c. Formulating the Measurement Mechanisms	
13. Conclusion	184
<i>Bibliography</i>	186



Acknowledgements

The author would like to thank the Institute of Defence Studies and Analyses (IDSA), New Delhi who were particularly supportive of this Monograph. My profound gratitude is also due to the Indian Army for affording me a sabbatical to pursue an area of study that has for long fascinated me. At IDSA, I would like to thank Air Cmde Ramesh Phadke (retd), formerly a research consultant, who constantly guided me in framing my research proposal. I am also indebted to several other military and civilian experts including: Air Vice Marshal A.M. Asthana (retd), Brig Gurmeet Kanwal (retd), Maj Gen Dhruv Katoch (retd), Brig S.K. Bhonsle (retd), Brig Arun Sahgal (retd), Brig Rumel Dahiya (retd), Brig S.K. Chatterjee (retd), Cmde Ashok Sawhney (retd), Capt (IN) Alok Bansal, Col Narinder Singh, Col P.K. Gautam (retd), Col Ali Ahmed (retd), Dr S. Kalyanaraman, Dr Ashok Behuria, Dr Smruti Pattanaik, Shri Sushant Sareen, Ms Smita Purushottam, Shri P.K. Upadhaya, Shri Prashant Kumar Singh and several other colleagues at IDSA who offered their valuable comments. I would like to thank Lt Gen Shammi Mehta, a retired General and an officer with considerable experience in military matters at the strategic level, and Brig Raj Shukla, formerly Research Fellow at IDSA, for their advice on the initial research proposal. I am particularly obliged to Prof. Richard K. Betts, whose seminal work on military readiness titled, *Military Readiness: Concept, Choices and Consequences*, has continually inspired me to analyse the problem of military readiness in the Indian context.

I am grateful to Prof. Sumit Ganguly, formerly Distinguished Visiting Fellow at IDSA, for having perused several iterations of the draft monograph. His pointed comments alone could have helped me to structure the research work as it stands today. My thanks are also due to the two anonymous reviewers nominated by IDSA, who made valuable suggestions to improve the scope and content of the monograph. My particular thanks also to Lt Gen B.S. Nagal (retd), Maj Gen A.K. Malik (retd) and Maj Gen Vikram Puri for invoking

my interest in operational logistic matters while serving at the Directorate General of Operational Logistics and Strategic Movement (DGOL & SM) at the Integrated HQ of MoD (Army). I am also extremely grateful to Lt Gen Prakash Menon, formerly Commandant, National Defence College, New Delhi for agreeing to review the final draft. His detailed comments and suggestions to re-structure the monograph were indeed very useful. I would also like to place on record my gratitude for the valuable comments offered by Shri Sheel Banerjee, formerly Chairman Defence Acquisition Council and Tourism Secretary, Government of India on the monograph. His vast experience and advice on matters of defence procurement was indeed very helpful in shaping certain sections.

I would like to thank the staff at the IDSA Library especially Shri Mukesh Kumar Jha and Shri Vikrant Kumar for their tireless efforts in helping me out with literature and references that were not so readily available. My special thanks are also due to Mr Vivek Kaushik and Ms Geeta Kumari for their efforts and the final publication of the Monograph.

Summary

Military readiness is perhaps one of the least studied and understood concepts in the field of strategic studies. In the absence of any significant literature in the public domain, defence policy makers and practitioners worldwide tend to define military readiness in several different ways. This often results in readiness assessments that are either too narrow or too broad. An analytical framework to assess levels of military readiness at the national level against well defined criteria therefore becomes a critical policy imperative. One of the traditional explanations on military readiness is to characterise it as a subset of military capability. For instance, the US armed forces define military capability as consisting of four distinct pillars namely: force structures, modernisation, readiness and sustainability. Herein, the constructs of “readiness” and “sustainability” collectively define the concept of military readiness, and in more specific terms, as the ability of a nation to deliver its combat potential on the battlefield. In practice, the US military interventions in Iraq and Afghanistan are reflective of their highly evolved readiness capacity – both structural and operational - to sustain operations several thousand miles away from the mainland. Such expeditionary operations surely demand high levels of military readiness, and above all, the ability of a military force to logistically maintain troops over great distances and time. In the context of India, the challenge of military readiness is somewhat different both in scope and context, and it is more about securing the country from myriad external and internal security threats emanating from a difficult neighbourhood. As a rising regional power in Asia, the future holds numerous security challenges and threats for the Indian state, and many beyond our immediate neighbourhood. It is, therefore, worthwhile to assess these critical security challenges and threats continually and objectively, and the likely demands – both organisational and doctrinal – that it might place on India’s military readiness and combat potential in the foreseeable future.

India’s military readiness needs can be articulated in several different ways. For instance, maintaining India’s territorial integrity, resisting overt or covert acts of terror, and ensuring its social and economic

well being have been the country's prime national security concerns since its independence. These vital national interests require protection against myriad external and internal threats. It is, therefore, not surprising that India's resolve to maintain high levels of defence preparedness has become even stronger in recent times. The Indian armed forces need to suitably organise, equip, train and prepare themselves to tackle a wide range of security challenges and threats. Ever since, the country has embarked upon a major military modernisation programme to enhance the size and capability of its armed forces. The scale of defence funding reflects both its desire to make up for lost time with regard to capability development, as well as the changing security environment. Being the tenth largest military spender in the world, the Indian armed forces are expected to spend almost US\$ 100 billion for purchase of military hardware in the current Five-Year-Plan (2007-12); and another US\$ 120 billion during the next Plan period (2012-2017). The long-term defence acquisition plans include substantial procurement of land, air and naval war fighting systems in order to field highly mobile, lethal, and networked conventional forces in the future. Consequently, it can be argued that qualitative and quantitative changes underway in the field of military doctrine, technology and culture could significantly transform India's war-fighting capabilities, and in turn, the military's structural and operational readiness over the next decade or so.

India's Prime Minister Dr. Manmohan Singh while addressing the annual Combined Commanders' Conference on October 20, 2009 said, "...the [country's] armed forces must be fully equipped to deal with all threat scenarios. Our troops should be trained to fight anywhere, anytime and under any conditions... their ability to deal with non-traditional threats must receive [even] greater attention." The emphasis on fighting "anywhere, anytime and under any conditions" is notable as India's military readiness concerns have seldom been so forcefully articulated in the past. At yet another level, our past armed conflicts have also brought into focus several defence related deficiencies within the country, and this subject has often led to much public debate. The Kargil intrusions of 1999, and the Indo-Pakistan crisis of 2001-02, particularly demonstrated several lacunae in the country's defence preparedness. The level of

preparedness though periodically scrutinised by the Standing Committee on Defence (SCD) lacks objectivity and focus in addressing the country's military readiness needs in the long term. The annual reports issued by the Ministry of Defence (MoD) too present a generic picture and do not sufficiently examine the country's war fighting capabilities against an established readiness criteria or scale. At yet another level, the three military services also look at operational readiness distinctly. Though one might argue that the raising of HQ IDS could have led to an improvement in the situation, but there is still considerable ground that needs to be covered in this regard. Furthermore, in the absence of a clearly articulated national security strategy, there are serious gaps in the articulation of the concept and components of military readiness among the national leadership, and defence policy makers and practitioners within the country.

Given the nature of emerging security threats and challenges both in the global and regional context, there is a need for injecting greater theoretical rigour among the national security policy makers and practitioners on this issue. This Monograph attempts to address this knowledge gap by flagging the key military readiness worries and concerns in the Indian context. It attempts to present an analytical framework which, though largely theoretical, could be employed by the Indian defence establishment to fashion a readiness strategy and measurement standards to meet the future challenges and threats. The author argues for a shift in the country's larger approach towards maintaining requisite levels of operational readiness in the armed forces. He argues that India has since long pursued what is called a policy of "defence preparedness", and which perhaps now needs to make way for a more nuanced policy of "military readiness" to meet the unforeseen military challenges of the future. The construct of "military readiness" as commonly articulated in the modern militaries is quite distinct in form and character from the current policy of "defence preparedness" being pursued in the Indian context. The former postulates the importance of being militarily "ready and relevant" at all times, while the latter reflects an attitude of being "satisfied" with whatever national resources in terms of money, manpower and material are placed at the disposal of the Indian armed forces to fight or respond in a

crisis situation. India therefore needs to graduate to a more nuanced expression of the country's defence preparedness in order to evaluate or judge the country's military readiness at all times. Military readiness, and not the archaic formulation of defence preparedness alone, will have to be the preparedness mantra of the future, and the policy makers and practitioners will have to take a serious view on the structural and systemic aspects related to readiness.

This Monograph organised into four parts attempts to investigate the problem of military readiness in the Indian context. The first part titled, 'The Concept and Expression' discusses the theory and practice of military readiness concepts and formulations as practised worldwide; the second part on 'India's Military Readiness Concerns' establishes the military readiness challenges and aspirations in the Indian context; the third part titled, 'India's Military Readiness Strategy' postulates India's military readiness approach and broad strategy in the conventional, sub-conventional and non-traditional context; the fourth part titled, 'Major Lessons and Recommendations' summarises the major findings of the Monograph and suggests a policy framework to contextualise and measure India's military readiness both during peace and war time. Herein, the research work employs the theoretical argument developed by Richard K. Betts, an American scholar and analyst of international repute, and utilises his three - tiered framework namely, "Readiness of What?", and "Readiness for When?" to explain India's military readiness needs and concerns in the medium to long term. Based on these three distinct lines of investigation, the Monograph suggests a military readiness strategy in the Indian context. The Monograph however does not delve deeper into the problem of readiness metrics and measurement standards, as these are issues of departmental detail and perhaps need a separate examination.

The process of assessing and reporting military readiness in the Indian armed forces is still in its early years because of lack of concrete and comparable readiness metrics, readiness measurement standards, and capacity for institutional oversight. More importantly, India's exaggerated reliance on achieving its military readiness through defence funding and equipment acquisitions alone inhibits us from addressing these preparedness concerns objectively.

Consequently, there is a need to view the problem of military readiness through the overlapping frames of national security, foreign and defence policy, doctrines and strategies, funding and technology, structures and capability, training and culture. A comprehensive understanding of the subject therefore becomes critical. There is also an urgent need to establish a deeper theoretical rigour on the contributory or contradictory factors that explain, define, or restrict the Indian military's readiness needs, concerns and strategy. Simplistically speaking, India needs to consistently maintain certain levels of "operational" or immediately deliverable readiness when it comes to dealing with our adversary in the west, while its focus in the north, and for protecting its maritime interests, will have to be more "structural" and long term in nature. India's principal strategic policy and planning dilemma will continue to be its ability to balance the "structural" and "operational" aspects of readiness required by the three services in order to operate over diverse terrain and space, thwart myriad security threats and challenges, and ensure desired military outcomes in times of national crisis.



1 Introduction

Backdrop

Military readiness is perhaps one of the least studied and understood concepts in the field of strategic studies. In the absence of any significant literature on the subject, policy makers and practitioners tend to define readiness in several different ways. The lack of an all encompassing definition is further aggravated by a dearth of metrics and standards. This often results in readiness assessments that are either too narrow or too broad. A conceptual framework to assess levels of military readiness against a well-defined set of performance criteria is therefore a critical policy imperative. An accurate assessment of military readiness depends on several factors: the size and composition of the armed forces; the training standards achieved; and the availability of the military wherewithal necessary to undertake assigned operational roles and missions. This in turn is linked to the country's economic potential, and importantly, the human and technological capital necessary to develop, nurture and field the desired war fighting capabilities.

One of the traditional explanations on military readiness is to characterise it as a subset of military capability.¹ For instance, the US armed forces define military capability as comprising of four distinct pillars: force structures, modernisation, readiness and sustainability. The constructs of “readiness” and “sustainability” collectively define military readiness and in more specific terms the ability to delivery combat potential on the battlefield. Senator Solomon Ortiz, the current Republican Chairman of the United

¹ The DoD defines military capability as, “the ability to achieve specified wartime objectives, which could be to win a war or battle, destroy a target set etc”.

States House of Representatives' House Armed Services Committee (HASC) Readiness Subcommittee once said:

For our military [the United States] to be ready to fight effectively - today and in the future - we have to have the right people in the right roles with the right equipment and the right training. How ready we were yesterday determines how well we fight today. How ready we are to fight today determines how well we fight tomorrow.²

The quote highlights the significance that the country accords to military readiness in the decision making hierarchy. One observes a similar organisational resolve among other major military powers across the world. In recent practise, the US military interventions in Iraq and Afghanistan are reflective of their military capacity (or in other words their organisational and operational readiness) to undertake sustained combat operations several thousand miles away from their home territory. Such expeditionary operations demand acutely high levels of military readiness, and above all, the ability to logistically maintain and sustain troops over long periods of time. In the context of India, the challenge is somewhat different and is more about securing and managing a troublesome land and sea frontier in South Asia. As a rising regional power, the future has in store many more challenges and concerns beyond our immediate neighbourhood as well. It might be worthwhile to assess these critical security challenges and explicate in detail the demands on India's military readiness in the foreseeable future.

² The House Armed Services Committee (HASC) oversight plan is filed pursuant to Clause 2 (d) of Rule X of the Rules of the United States House of Representatives. The HASC is divided into seven subcommittees of which *readiness* is one of them. This subcommittee looks after military readiness, training, logistics and maintenance issues. In addition, the subcommittee is also responsible for all military construction, installations and family housing issues, including the base closure process, and energy policy and related programmes of the DoD.

The Indian Context

India's prime national concerns since independence have been its territorial integrity, social and economic well being, and myriad internal security threats. Securing these interests necessitates protecting the country against external and internal threats. The Indian armed forces have met these challenges with extreme courage and professionalism in the past, and ensured that the nation's core values and principles are indeed preserved. India's rising economic clout and international stature will make increasing demands on the country's armed forces in times to come, and they will need to anticipate these many security threats and challenges, and must prepare themselves to tackle a range of military conflicts and contingencies.

India's resolve to maintain high levels of defence preparedness has become more apparent in recent years. The country has embarked upon a major military modernisation programme for increasing the size and capability of its armed forces. The scale of defence funding reflects both on its desire to make up for lost time and the changing security environment. Currently, with the tenth largest military budget in the world, it is predicted that the Indian defence forces would spend nearly \$100 billion on military hardware in the current Five Year Plan (2007-12); and another \$120 billion during the next Plan period (2012-2017).⁴ The long term defence acquisition plan

Table 1: Projected Capital Expenditure (in \$US)³

Year 2010-11	13110
Year 2011-12	14421
Year 2012-13	15863
Year 2013-14	17450
Year 2014-15	19195
Total	80039

³ The Indian Thirteenth Finance Commission Report, December 2009.

⁴ CII-Deloitte report titled, "Prospects for Global Defence Export Industry in Indian Defence Market", CII Indian Defence Industry Mission EUROSATORY 2010, pp. 5-6; CII-KPMG report titled, "Opportunities in the Indian Defence Sector: An Overview", 2010.

(Long Term Integrated Procurement Plan or LTIPP) include substantial procurement of land, air and naval systems with a view to field highly mobile, lethal, and networked defence forces in the future. In the FY 2010-11 alone, \$32.03 billion has been earmarked for national defence and of this \$13.04 billion is to be spent on capital acquisitions alone. The projected figure is expected to rise to \$19.20 billion by 2015. However, the future capability development will be determined by the Indian defence establishment's ability to affect indigenisation and acquisition reforms.

Qualitative changes currently underway in the field of military organisations, technologies, doctrines, operational strategies and institutional culture could significantly transform the country's war fighting capabilities over the next decade or so. India's Prime Minister Dr. Manmohan Singh while addressing the annual Combined Commanders Conference on October 20, 2009 said:

The government is fully committed to the modernisation of the armed forces and ensuring their military superiority and technological edge. The modernisation plan should have a long-term perspective and be formulated in an integrated manner involving all three services. The armed forces must be fully equipped to deal with all threat scenarios. Our troops should be trained to fight anywhere, anytime and under any conditions. [and] Their ability to deal with non-traditional threats must receive greater attention.⁵

The emphasis on fighting "anywhere, anytime and under any conditions" is notably important as India's readiness concerns have never been so forcefully articulated by any national leader in the past. Our past military conflicts and "small wars" have brought into focus several doctrinal and capability deficiencies, and these have

⁵ Excerpt from the address of the Prime Minister during his address to the Combined Commanders' Conference held in October 2009; "PM: Imminent Attack Alerts a Cause of Worry," *The Asian Age* Delhi Edition, October 21, 2009.

been a subject of much public debate.⁶ The public debate however does not full take into account the limits and limitations of India's defence policy, doctrines and strategy, funding and structures, capabilities and capacities, and issues of logistical sustainability.⁷ The domestic perceptions on India's military readiness sometimes suffer from biased writings or assessments in the print media, and very often ill informed reporting in the electronic media. There are perhaps only a few analysts and experts in the public domain who can critically analyse and explain the theory and practise with regard to military readiness concerns of the country.⁸ At yet another level, the scrutiny of country's defence preparedness is routinely undertaken by the Lok Sabha Standing Committee on Defence (SCD). The SCDs routinely write and promulgate reports commenting on India's defence policy and the operational health of the armed forces. The reports often lack objectivity and appropriate diagnostics especially whilst analysing the country's

⁶ Post 26/11 Manoj Joshi writes with regard to military options that, "the key worry of the three services was in what constitutes the war wastage reserves. This is the stock of missiles, munitions and equipment that is kept as a reserve and is usually equivalent to the duration of the envisaged conflicts. Because stocking costs a great deal of money, the MoD has pared some categories of the reserves". He further cites a government report of 2003 which pointed out that "at the commencement of OP Vijay, the stocks of laser guidance kits with the IAF were sufficient for only 12 days as against the laid down reserve of 30 days". The same report pointed out that another type of a bomb and its tail units held by the mother depot at the beginning of the war was only "23 per cent and 2.2 per cent respectively of the mandatory minimum reserves, while no fuses were held in stock by the depot." <http://mjoshi.blogspot.com/2009/01/was-indian-army-ready-for-war.html> (Accessed October 13, 2009).

⁷ The variance in reporting on health of the armed forces can be seen from featured publications between August and December 2003 (Post Op Parakram). While the official report featured as "Modernisation of the Indian Army" at www.pib.nic.in/feature/feyr2003/faug2003/f080820032.html (Accessed April 21, 2009) presents a kind of a satisfactory picture whereas another report titled "Modernisation-Challenges for Indian Army" by Ranjit B. Rai at www.defence.com/Army~Chal.html (Accessed April 21, 2009) presents a completely opposite picture.

⁸ Prominent among these are few web blogs and sites namely the Broadsword, 8ak etc that do carry an informed discussion on readiness related issues though these too are not devoid of journalistic biases and shortcomings.

readiness concerns and strategy. The Annual Defence Reports issued by the Ministry of Defence (MoD) present a generic picture and do not sufficiently clarify upon year on year changes in the country's war fighting capabilities and equipment worthiness. At yet another level, the three services also look at aspects of their operational readiness distinctly. Furthermore, in the absence of a national security strategy in the country, there are serious gaps in the articulation of the "readiness" concept and components amongst the national leadership, policy makers and practitioners.⁹

Given the nature of emerging national security threats and challenges, some of which are clearly not discernable or distinguishable at this stage, there is a need to build sufficient theoretical rigour and learning among the Indian defence policy makers and practitioners with respect to contextualising and addressing the problems of military readiness both at the macro and micro level. The following sections describe the broad structure of the monograph and the methodology adopted to present an approach – which is both theoretical and remedial - towards addressing the military readiness issue. The author argues that the concept of "military readiness" is distinct from the construct of "defence preparedness" which is commonly used in the Indian context. The latter reflects an attitude of "self satisfaction" (i.e. of fighting with forces and material that is at the disposal of the armed forces), while the former postulates the importance of being "ready and relevant" always and every time to face the unforeseen security challenges and threats in the twenty-first century. The monograph particularly attempts to highlight the relevance and importance of military readiness for facilitating high level decision making in the Indian armed forces.

⁹ The most graphic account of "un-readiness" in the Indian context is perhaps written by Brig. Gurmeet Kanwal (ret'd) at www.Kanglaonline.com/index.php?template=printkshow&kid (Accessed April 21, 2009).

Structure

The subject is organised under four sections. Chapters 2, 3 and 4 constitute the first section titled, 'The Concept and Expression'; Chapters 5, 6 and 7 comprise the second section titled, 'India's Military Readiness Concerns'; Chapters 8, 9 and 10 cover the third section titled, 'India's Military Readiness Strategy'; and Chapters 11 and 12 form the fourth section titled, 'Findings and Policy Recommendations'.

The detailed layout of chapters is as follows:

- Chapter 2 examines the problem of readiness at three levels: the definitional dilemma; the causality between the constructs of "military capability", "military readiness" and "military effectiveness"; and the ambiguity inherent in the Indian expression.
- Chapter 3 focuses on the theoretical dimension of the construct of military readiness at three inter-related levels: the concept; components and contending approaches in its articulation; and its relevance in the Indian context.
- Chapter 4 examines the military readiness practices in four militaries: the United States, United Kingdom, Australia and the People's Republic of China (PRC).
- Chapter 5 establishes India's operational readiness concerns in the light of the prevailing security environment, the critical challenges and threats that the country faces, and the military imperatives that drive India's defence preparedness.
- Chapter 6 analyses the contours of India's military readiness strategy in terms of the approach and affordability, and suggests an analytical framework for strategising and synchronising the country's military readiness needs.
- Chapter 7 attempts to match India's fundamental military readiness concerns with strategy in light of the doctrinal changes and capability development underway.
- Chapter 8 examines the limitations and hurdles that inhibit the fielding of a "ready and relevant" force structure at the

levels of : policy and planning; capability development; and institutional culture.

- Chapter 9 outlines the broad approach to fashion India's hard power in the 21st century with a view to develop readiness policy choices and options for the future.
- Chapter 10 discusses the status of three important elements of readiness namely, money, manpower and material in the Indian context.
- Chapters 11 and 12 summarise the major findings of the research and suggests a broad policy framework and mechanism for assessing and recording military readiness levels in the Indian context.

The monograph argues that the process of assessing and reporting military readiness in the Indian armed forces is still in its infancy because of the lack of metrics, measurement standards, and institutional oversight. India's exaggerated reliance on achieving military readiness through defence funding and equipment acquisitions alone inhibits us from addressing these concerns objectively. Consequently, military readiness needs to be viewed through the overlapping frames of national security, foreign and defence policy, doctrines and strategies, funding and technology, structures and capability, training and culture. A comprehensive contextual understanding of military readiness is of great importance in the current Indian context. There is also an urgent need to establish a deeper causality between the several contributing and contradicting factors that define the Indian military's readiness concerns and strategy. Simplistically arguing India needs to maintain a certain level of "operational" readiness to guard against likely Pakistani misadventures, while the military readiness focus in the north against China, and the Indian Ocean Region (IOR), will have to be more "structural" and "long term" in nature. Clearly India's strategic dilemma lies in balancing the "structural" and "operational" aspects of readiness within the three services over time. The uneven efficacy of the central paramilitary forces and the state police services in dealing with internal security threats erode the military's capacity to deal with the conventional, sub-conventional and non-traditional challenges it may face in the future.

Methodology

The research is constrained due to lack of policy documents and official data in the public domain. Also, in the absence of India specific literature on readiness, the monograph is based on a detailed study of several publications, reports and testimonies rendered in respect of the Western militaries. In the absence of defence related data in the public domain in India this monograph largely relies on reports published by the departments of defence and audit offices in the United States, the United Kingdom and Australia. The reports of the parliamentary standing committee on defence (Lok Sabha), the comptroller and auditor general, and MoD annual defence reports of the government of India (GoI) have been consulted to draw some important conclusions. Several retired Indian defence and civilian officials were also consulted. Most importantly, the monograph employs the argument developed by Richard K. Betts, an American scholar on military readiness, in his seminal work titled, *'Military Readiness: Concepts, Choices and Consequences'*, in the mid nineties.¹⁰ It utilises a three-tiered analytical framework developed by Betts, and which is simply defined as - Readiness for What? Readiness of What? and Readiness for When? - to explain the military preparedness concerns and strategy in the Indian context. The three analytical questions discussed in the monograph correspond to the three prominent diagnostic themes: the myriad security threat (s) that the country faces (i.e. Ready for What?); the military capabilities required to meet these threats (i.e., Ready with/of What?); and the broad timeframe within which these capabilities are required to be fielded to meet these threats (i.e., Ready for When?). Based on these three distinct lines of investigation, the monograph suggests a military readiness strategy in the Indian context encompassing the doctrinal, organisational and technological aspects. Furthermore, the military readiness strategy is explained in terms of the peacetime, operational (short to medium term), structural (medium to long term) and mobilisation related readiness needs of the Indian armed forces. The monograph however does not delve into the

¹⁰ Richards K. Betts, *Military Readiness: Concepts, Choices and Consequences*, The Brookings Institution, Washington, 1995, p. 33.

quantification of readiness metrics and measurement standards, as these are issues of organisational detail and need a separate examination. The monograph does not claim to be prescriptive by any standards but only makes a few policy suggestions to rationalise the broader Indian thinking on the subject.

Part-I

The Concept and Expression



2

The Problem of Military Readiness

Introduction

The Cold War exemplified “readiness” when thousands of tanks, aircraft and nuclear warheads stood poised for action at short notice.¹¹ No nation challenged the value of these acute levels of military readiness until the pacifists and radicals figured out what it meant, what it cost and how much of it was enough.¹² However, the collapse of the Soviet Union suddenly made these levels appear quite unnecessary and wasteful. Notwithstanding the changed strategic environment, most countries continued to retain high levels of military readiness for several good and relevant reasons. It became particularly evident when the DoD in the United States appointed a high level bureaucrat to oversee the gaps and deficiencies in America’s military readiness in 1997.¹³ The 9/11 attacks, and several other acts of terror that followed across the world, reinforced the requirement to persist with high levels of operational readiness.¹⁴ Prior to 1950s,

¹¹ Ibid, p. 3.

¹² Ibid, p. 6.

¹³ Secretary of Defence Les Aspin, *Report on the Bottom Up Review*, Department of Defence, October 1993, p. 79, (Accessed June 16, 2009). The report outlines the importance of the aspect of military readiness and the need to not only identify readiness problems but also anticipate and prevent occurrence of readiness problems through an ‘early warning [management] system’.

¹⁴ Robert Gates states in the *Quadrennial Defence Review* 2010 that, “the defining principle of the Pentagon’s new national defence strategy is balance. The United States cannot expect to eliminate national security risks through higher defence budgets, to do everything and buy everything. The Department of Defence must set priorities and consider inescapable tradeoffs and opportunity costs. The strategy strives for balance in three areas i.e., between trying to prevail in current conflicts and preparing for other contingencies; between institutionalising capabilities such as counterinsurgency and foreign military assistance and maintaining the United States’ conventional and strategic edge against other military forces; and between retaining those cultural traits that have made the U.S. armed forces successful and shedding those that hamper their ability to do what needs to be done”.

and interestingly during the two world wars in the first half of the twentieth century, the US armed forces were often caught in a state of military “un-readiness”.¹⁵ The American tradition of rapid demobilisation after each war and the tardy re-mobilisation for the next war resulted in fielding of forces that were either inadequately equipped or ill trained for war.¹⁶ But this “un-readiness” also proved advantageous in a way, since delayed military deployments during the two world wars resulted in least number of civilian and military casualties, and maximum strategic benefits to the United States on termination of military hostilities.¹⁷

The American “un-readiness” once again got flagged when North Korea invaded South Korea, in the late forties. US Task Force Smith hurriedly re-located from Japan to Korea were mauled by the advancing North Koreans.¹⁸

It took considerable time and effort before the US Eighth Army could turn round the unfavourable military situation.¹⁹ But then this

¹⁵ Richards K. Betts, no. 10, p. 5-19.

¹⁶ Betts states that, “the most consistent inefficiency in American preparations for war was in the sequence of mobilising military manpower and industrial production and the former always outstripped the latter”.

¹⁷ In World War I, the delay in formation of the America’s First Army nearly brought the British and French close to defeat. Again during World War II, the Normandy landings were weakly opposed because Hitler was tied down on the eastern front with Russia. An estimated 50 million people died in World War II of which America suffered only one per cent fatalities. See Betts p. 15.

¹⁸ Task Force Smith comprising a mere 406 infantry personnel and 134 artillery gunners were deployed into a blocking position north of Osan. The force had only six rounds of anti tank ammunition which were exhausted in first few minutes of the battle. After about six hours of intense fighting, the task force withdrew suffering over 150 fatalities. The first ten weeks of war proved to be most disastrous until MacArthur delivered a stunning counter stroke at Inchon. See Betts, p. 16.

¹⁹ The US Eighth Army too had its share of readiness problems. The units were hampered by shortages of material, personnel and training. A provisional tank battalion with M4A3 Sherman tanks had to be hastily put together in Tokyo; one tank company had to equip itself by taking tanks off the Pershing ‘monument’ and the tanks on the pedestals around Fort Knox while personnel had to be taken from units all over the Eighth Army - including some working with the PXs. See Betts, p. 18.

position changed dramatically in the fifties, when the erstwhile tradition of military “un-readiness” no longer remained relevant. Several European nations, as members of the NATO alliance, too were forced into high levels of military expenditure and readiness to ward off the Soviet threat. The extraordinarily large troop commitment in the European war zone imposed an immense economic and military burden on the allied forces until relations with Soviet Union thawed in the 1990s. High levels of military readiness were again demonstrated during the two wars that the United States and their allies fought against Iraq.²⁰ Post 9/11, the emphasis on readiness continues in the US armed forces.²¹ The *Quadrennial Defence Review 2006* states that:

With its allies and partners, the United States must prepare to wage war in many locations simultaneously and for some years to come. As the Department of Defence works to defeat these enemies, it must also remain vigilant in an era of surprise and uncertainty and prepare to prevent, deter or defeat a wider range of asymmetric threats.²²

The policy document is particularly interesting from readiness point of view. It stresses the need for shifting emphasis from a “battle ready” to a “battle hardened” force.²³ The importance accorded can

²⁰ Betts cites that, “as against 60 per cent tank losses reported on account of mechanical failure during the Korean campaign, only one B-52 bomber mission was cancelled due to mechanical fault during the nineteen day air campaign in the first Gulf War”.

²¹ The United States National Defence Strategy of 2005 states that, “uncertainty is the defining character of today’s strategic environment, and while we work to avoid being surprised, we must posture ourselves to handle unanticipated problems.” The Capstone Concept for Joint Operations states, “An expected future operating environment where the joint force’s primary military problem will be represented by adaptive adversaries that attempt to keep the joint force from being successful across the range of military operations.”

²² The *QDR Report* at <http://www.defenselink.mil/qdr/report/Report20060203.pdf>, p.13, (Accessed October 25 2009).

²³ *Ibid*, see section on “Transforming by Shifting Emphasis from the 20th Century to the 21st Century”, p. vi.

will be gauged from several “shifts” in operational emphasis listed in the document.²⁴

Of the 35 odd issues highlighted, there are barely a few that do not directly contribute towards readiness, while a large majority are directed towards improving the readiness levels. More importantly, the document carries a major lesson for the evolving militaries such as India. The shifts suggested in terms of operational emphasis could be easily extrapolated in context of the Indian military to draw relevant deductions and readiness agenda for the future.

²⁴ The shift in operational emphasis as envisioned in *the QDR 2006* is summarised below:

- From a peacetime tempo – to a wartime sense of urgency.
- From a time of reasonable predictability – to an era of surprise and uncertainty.
- From single-focused threats – to multiple complex challenges.
- From nation-state threats – to decentralised network threats from non-state enemies.
- From conducting war against nations – to conducting war in countries we are not at war with (safe havens).
- From “one size fits all” deterrence – to tailored deterrence for rogue powers, terrorist networks and competitors.
- From responding after a crisis starts (reactive) – to preventive actions so it does not become crises (proactive).
- From crisis response – to shaping the future.
- From threat-based planning – to capabilities based planning.
- From peacetime planning – to rapid adaptive planning.
- From a focus on kinetics – to a focus on effects.
- From 20th century processes – to 21st century integrated approaches.
- From static defence, garrison forces – to mobile, expeditionary operations.
- From under-resourced, standby forces (hollow units) – to fully-equipped and manned forces (combat ready units).
- From a battle-ready force (peace) – to battle hardened forces (war).
- From large institutional forces (tail) – to more powerful operational capabilities (teeth).
- From major conventional combat operations – to multiple irregular, asymmetric operations.
- From separate military service concepts of operation – to joint and combined operations.
- From forces that need to de-conflict – to integrated, inter-dependent forces.
- From exposed forces forward – to reaching back to CONUS to support expeditionary forces.

However, this could be examined in the backdrop of the theory and practise evolved on readiness concepts, choices and consequences developed by Richard K. Betts in the aftermath of the Soviet collapse.

This chapter examines the problem of military readiness from a theoretical perspective at three levels: the definitional dilemma surrounding the concept of “military readiness”; its importance vis-à-vis the other commonly used constructs of “military capability” and “military effectiveness”; and the ambiguity inherent in the Indian expression of military readiness. A short survey of India’s understanding on military readiness is included to indicate the diversity in expression and the general focus of security experts and analysts on the subject issue.

Definitional Dilemma

The term “defence preparedness” is often used to describe levels of operational readiness or gaps thereof in the Indian armed

-
- From emphasis on ships, guns, tanks and planes – to focus on information, knowledge and actionable intelligence.
 - From massing forces – to massing effects.
 - From set-piece manoeuvre and mass – to agility and precision.
 - From single service acquisition systems – to joint portfolio management.
 - From broad-based industrial mobilisation – to targeted commercial solutions.
 - From service and agency intelligence – to truly Joint Information Operations Centres.
 - From vertical structures and processes (stovepipes) – to more transparent, horizontal integration (matrix).
 - From moving the user to the data – to moving data to the user.
 - From fragmented homeland assistance – to integrated homeland security.
 - From static alliances – to dynamic partnerships.
 - From predetermined force packages – to tailored, flexible forces.
 - From the US military performing tasks – to a focus on building partner capabilities.
 - From static post-operations analysis – to dynamic diagnostics and real-time lessons learned.
 - From focusing on inputs (effort) – to tracking outputs (results).
 - From Department of Defence solutions – to interagency approaches.

forces.²⁵ Elsewhere and more pertinently in western militaries, the expression is phrased as “military readiness” and conceptualised as such to define a nation’s military preparedness to meet operational contingencies.²⁶ Interestingly, the term “defence preparedness”, unlike the Indian expression and understanding, is used in context of the measures undertaken by the Department of Homeland Security (DHS) in event of an emergency or national crisis, in the United States.²⁷ A survey of several definitions available in the open domain highlights the disparity in articulation of the military readiness expression. These inconsistencies are best explained by Major M. R. Voith, a Canadian military officer, in an article titled, *Military Readiness* in the Canadian Army Doctrine and Training Bulletin.²⁸ The wide variance in its interpretation is particularly highlighted in the report which evaluated the performance of the Canadian armed forces during the 1993 Somalia Operations. The Report of the Somalia Commission of Inquiry states:

There was no agreement or common understanding on the part of officers as to the meaning of the term operational readiness.

²⁵ Report by Standing Committee on Defence, Year 2004-05, Fourteenth Lok Sabha, MoD. The document uses the phrase “defence preparedness” to explain deficiencies in operational readiness levels (Paragraphs 1.30 and 1.40 refer). Here too the discussion is focussed on aspects of budgetary allocation, such as, “*closely related to the issue of defence preparedness and the ability to meet the threat perception is the quantum of funds available to the services*”, rather than focussing on gaps in military readiness. Chapters III, IV and V amongst other issues highlight the shortfall in major equipment categories and the modernisation or procurement initiatives currently underway, and do not specifically comment on the impact of readiness in the Indian armed forces.

²⁶ The concept is sometimes also referred to as “combat readiness” and defined as a condition of the armed forces and constituent units and formations, warships, aircraft, weapon systems or other military technology and equipment to perform military operations, or functions consistently with the purpose for which they are designed, or the management of resources and personnel training in preparation for combat. See http://en.wikipedia.org/wiki/Combat_readiness (Accessed April 30, 2009).

²⁷ <http://www.dhs.gov/xprepresp> (Accessed April 30, 2009).

²⁸ http://www.army.forces.gc.ca/caj/documents/vol_04/iss_2/CAJ_vol4.2_full_e.pdf (Accessed April 30, 2009). Few expressions as articulated at various levels are summarised:

- The ability of forces, units, weapons, or equipments to deliver outputs for which they were designed ... to deploy and employ without unacceptable delays.

Therefore, because the term had no previous meaning in doctrine or policy, the words came to mean whatever officers and commanders wanted them to mean at the time. In other words, any officer could declare a unit to be operationally ready without fear of contradiction, because there were no standards against which to measure the declaration.²⁹

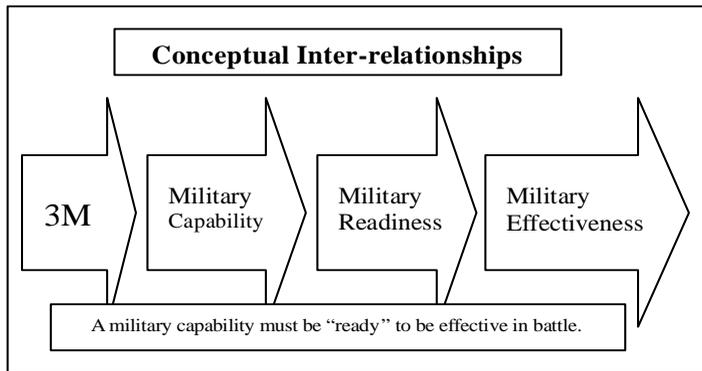
Like any other generic expression, military experts and analysts find it difficult to draw a consensus on the subject of military readiness. Richard K. Betts, a leading expert, argues that the professional focus (i.e., military) on readiness is often quite narrow.³⁰ The construct in a narrow context is seen in terms of the military training standards, the availability of war fighting equipment, the stocking levels and the possible industrial surge rates for war, and the serviceability and maintainability standards of the military equipment and weapon

-
- The capacity to perform one's mission when directed to do so. This is synonymous with preparedness.
 - The ability of a force to fight with little or no warning.
 - Balancing of manpower, investment and operations, and maintenance expenditures that produce the force structure capability of rapid sustained and ultimately full response to the threat.
 - A measure of the pre-D Day status of the force in terms of wartime requirements for operationally available material and appropriately trained manpower.
 - The fraction of the force that can be committed to fight without unacceptable delays and acquit itself well.
 - The function of force structure, material, doctrine, manning and training.

²⁹ Report of the Somalia Commission of Inquiry, July 1997.

³⁰ Richards K. Betts, *Military Readiness: Concepts, Choices and Consequences* (Washington: The Brookings Institution, 1995), p. 2. The book is the first seminal work on the concept of military readiness. It addresses the issue of military readiness in the United States in the post cold war context in from of several investigative questions: Should readiness to fight tomorrow take precedence over readiness to fight next month or next year? Should the personnel strength, equipment, training and provisioning of forces remain at maximum levels so that our troops will be ready to fight at a moment's notice? Should the US armed forces maintain a larger force in skeletal form that could provide a bigger capability but one which would need more time in a crisis to mobilise and get in shape? Should the first priority be to maximise military capability in the longer term, especially when a new adversary might emerge, and a decision to engage him requires reducing the current capability?

platforms in service. He further argues that, the broader aspects of readiness are often left unaddressed because when used in a narrow sense, while the technical issues (i.e., aspects of operational readiness) get thrown up. Furthermore, the concept loses its strategic connotation (i.e., aspects of structural readiness) which is extremely important for building long term military capabilities.³¹ There is therefore a need to understand that a wide range of issues affect military readiness at the strategic level. These include critical infrastructure and transportation; research, development and



production; provisioning and acquisitions; logistical sustainability; and surge in industrial production. Now with military confrontations transcending into sub-conventional and asymmetric dimensions, the issue acquires a new meaning in terms of the expected response levels.³²

³¹ Betts, no. 10, p.4.

³² See James Clancy and Chuck Crossett, "Measuring Effectiveness in Irregular Warfare", *Parameters*, US Army War College, Volume XXXVII, Number 2, Summer 2007. In the context of sub-conventional warfare, James Clancy and Chuck Crossett of the National Security Analysis Department at Johns Hopkins University underscore the importance of three factors for measuring effectiveness of a counterinsurgency force namely; sustainability or otherwise of the insurgent ideology; legitimacy of insurgent action amongst the local population; and the overall stability of the insurgency affected region.

Locating the Readiness Debate

India's predicament is that there is no policy (at least in the public domain) that defines the construct of military readiness, and lays down the metrics, standards and mechanisms to assess and report the country's defence preparedness. The Indian Parliamentary Standing Committee reports and the annual reports issued by the Ministry of Defence offer scant information to engage in an informed debate. There is a tendency to apply the term imperfectly, and often ambiguously. As a consequence, the defence policy makers, practitioners, and experts use words such as "defence acquisitions", "military build up", "military growth", "military capability" or "military effectiveness" to explain changes in the country's war fighting potential. The literal and functional abuse of the term becomes acute when it is lumped with the construct of "military capability" or "military effectiveness". It is therefore important to clarify the concept of "military readiness" from a theoretical point of view. Since there is a basic relationship between the constructs of "military capability", "military readiness" and "military effectiveness", it is important to understand their individual dynamics and inter-relationship. This is significant; as it enhances the ability of the defence establishment to translate the three critical resources of creating hard power i.e. money, manpower and material (3Ms) into an effective war fighting capability. When, where and how the construct of "military readiness" come to fore in relation to "military capability" and "military effectiveness" is explained in the following paragraphs.

- **Military Capability:** It is universally argued that a nation embodies both soft and hard components of power. Stephen Biddle argues that since states assess hard power in several different ways, there can be no single concept of military capability that can be applied universally to all countries.³³

³³ Stephen Biddle, *Military Power: Explaining Victory and Defeat in Modern Battle*, Princeton University Press, Princeton, p. 5-6. Offensive capability is defined as the ability over time to "destroy maximum hostile forces while preserving one's own" and defensive capability as the ability to "hold ground with least number of casualties".

He defines military capability at three broad levels: the numerical superiority; the technological edge; and the application or utility of force aimed at maximising territorial gains and enemy casualties.³⁴ He further asserts that “numerical superiority” and “technological edge” are poor indicators of military capability, as the actual combat worth of a country’s military can only be demonstrated by its effective application of force.³⁵ In his view, the “capability” debate is unduly focused on technological innovations, as defence policy makers and practitioners often believe that better technology alone can win wars. And since the principal position is focused more on technology, there is a tendency to undervalue the importance of military readiness.³⁶ Ashley J. Tellis argues that countries subsist in an environment where internal and external threats are common and ever present, and therefore war fighting capability becomes the ultimate measure of a state’s influence.³⁷ He defines military capability as a product of the comprehensive national power (CNP) where five strategic resources collectively produce the war fighting capabilities.³⁸ In his view, military capabilities allow countries to defend themselves and pursue their national interests. But whether they possess a force that is capable of overwhelming their adversaries depends on their actual or potential military capability. Since military capability is the ultimate output of the nation, the assessment of battlefield competencies (i.e., military effectiveness) can be a difficult

³⁴ Ibid, p. 14-19.

³⁵ Ibid, p. 190-191.

³⁶ Biddle, no. 33, p. 4.

³⁷ Ashley J. Tellis, *Measuring National Power in the Post-Industrial Age*, RAND Corporation, 2000, pp. 133 -135.

³⁸ This includes technology, enterprise, human and financial capital and physical resources. Ibid, pp. 136-143. Tellis asserts that conversion of national resources to military capability is a function of national performance. National performance is defined by the external constraints faced by the country, its infrastructural capacity and ideational resources to innovate and build military forces. Ibid, pp. 143-157.

task. The evaluation of battlefield competencies is best explained by Jeffery A. Isaacson, an eminent scholar who has done some pioneering work in this field at the RAND Corporation.³⁹ The key argument in Isaacson's model is that development of military capability is not just about acquiring technologies, but of creating "integrative capacities" to utilise the manpower and technology for effective military operations.⁴⁰ Both Tellis and Isaacson limit their argument to the importance of "strategic resources" and "integrative capacities" for building military capabilities with little emphasis on readiness outcomes.

- **Military Effectiveness:** Historians Allan Millet and Williamson Murray use the phrase "military effectiveness" to explain that military activity is heterogeneous and existing measures fail to capture the complexities of assigned military roles and missions.⁴¹ In their view, the "sociological" and "operational research" approach to explaining military effectiveness fall short for several reasons.⁴² Their work emphasises the importance of force structures, procedures and practices for converting raw resources into the war fighting capabilities. In their view, the problem of military

³⁹ Ibid, pp. 158-159.

⁴⁰ Ibid, p.159. Integrative capacity implies manpower, organisations, doctrine and concepts, training, logistics, infrastructure and maintenance activities. Technological threshold implies combat and support platforms to include, missiles, precision-guided missiles (PGMs), radars, night vision devices, fire control systems, avionics, air defence, C3 systems etc.

⁴¹ Allan R. Millet and Williamson Murray, *Military Effectiveness Vol I: The First World War*, Allan & Unwin, Boston, pp. 26-27.

⁴² The sociological approach for explaining military effectiveness relates to issues of unit cohesion, group solidarity and small unit leadership, whereas the operational research approach focuses on doctrines, training and leadership issues. The former fails to define behaviour of large scale military organisations, while the latter, being quantitative in nature, provides only partial answers to organisational behaviour. Some well-known sociologists who have worked in this field are Tania M. Chacho, S.L.A. Marshall, W.D. Henderson, Roger W. Little, Edward Shils, Morris Janowitz and Omer Bartov.

effectiveness needs to be viewed in its vertical and horizontal dimension, as a simple aggregation of the performance of individual units does not lead to a realistic military evaluation.⁴³ And since its precise calculation is not feasible, they conclude that military effectiveness can best be expressed at four levels: the political, strategic, operational and tactical level.⁴⁴ In recent years, Risa Brooks and Elizabeth Stanley have built on the work of Millet and Murray, and other scholars.⁴⁵ Brooks and Stanley explain that the sources of military power are diverse and embedded in the broader social, institutional and international factors rather than in its conventional elements and articulation. Their overarching argument is that, “a state’s military effectiveness depends on the global environment and peculiarities of political culture, social structures and institutions” and “only partially on the state’s material and

⁴³ The vertical dimension at the political, strategic, operational and tactical level is concerned with the preparation and conduct of war. The horizontal dimension is at each vertical level deals with tasks such as recruitment, procurement, planning, training, logistics and technology adaptation.

⁴⁴ Proficiency in acquiring raw resources to maintain, expand and reform the armed forces is referred to as political effectiveness; the ability of the civilian and military leadership to secure national goals and objectives defined as strategic effectiveness; the operational effectiveness which involves the planning, preparation and conduct of war to shape the war outcomes; and the tactical effectiveness which refers to the specific techniques used to fight the military engagements.

⁴⁵ Risa Brooks and Elizabeth Stanley, *Creating Military Power: The Sources of Military Effectiveness*, Stanford University Press, Stanford, pp 5-7. The authors argue that conventional assessment of military power tends to emphasise the basic resources for explaining military effectiveness, and in this context, it summarises the work of some renowned sociologists, political scientists and military historians. Sociologists like Edward Shils and Morris Janowitz view an effective military as one whose soldiers exhibit high levels of unit cohesion. Similarly the military operations research approach towards explaining effectiveness is limited to the tactical level, and lacks assessment and basis for higher level military planning. Political scientists like Stephen Rosen, Dan Reiter, Allan Stam, Stephen Biddle and Robert Zirkle also focus on the tactical level of war and pay little attention to strategic and operational issues. Military historians such as Martin Creveld, Michel Handel, Bruce Catton, John Keegan, John Gooch, Stephen Ambrose and Shelby Foote provide rich contextual narratives about societies at war but then their works do not theorise military effectiveness.

human resources”.⁴⁶ They argue that the term military effectiveness may have a different connotation when used by policy makers, practitioners and analysts. Sometimes it may be used to refer to the readiness of armed forces to deploy or indicate the accomplishment of an assigned mission or even to highlight the attributes of an organisation and the quality of military leadership.⁴⁷ According to them for consistency of theoretical analysis, the construct of effectiveness should be measured against four key attributes: the integrative capacity of a force across the tactical, operational and strategic levels; the ability to respond to internal unrest and external threats; the availability of manpower skills and competencies; and the quality of weapon systems and equipment held.⁴⁸ In their view, an integrated and responsive combat force backed by skilled manpower and battle worthy equipment is more likely to produce decisive and successful battle outcomes.

The foregoing analysis on the constructs of “military capability” and “military effectiveness” brings to light the inter play of three important aspects:

- **Strategic Resources:** The importance of strategic resources and their availability for creation and fielding of the desired military capabilities is argued by Biddle and Tellis.

⁴⁶ Ibid, p.1. The authors argue that military power emerges from the political and social processes within the country, and that its creation is simply not a technical issue and nor is it a question of raw resources. It asserts that the forces that allow a state to generate military power from its resources are complex and originate in intangible features of the state and society.

⁴⁷ Ibid, p. 8.

⁴⁸ Ibid, pp. 9-10. Integration is defined as the ability to ensure consistency in military activity by creating synergies within and across levels of military activity and avoid counterproductive action; responsiveness is the degree to which a state accommodates both internal and external constraints and opportunities in preparing itself for armed conflicts; skill includes the capacity to ensure that military personnel are motivated and prepared to execute tasks on the battlefield; and quality or the capacity of the state to supply itself with essential weapons and equipment.

- **Organisational Cohesion:** The significance of the integrative capacities towards synergising the strategic resources is emphasised by Issacson, Millet, Murray, Brooks and Stanley.
- **Situational and Decision Making Climate:** The criticality of a balanced civil military dynamic and decision making framework towards the application of military synergies on the battlefield is asserted by Murray, Millet, Brooks and Stanley.

The discussion clearly highlights the lack of agreement among military scholars and analysts on the process of creating, organising, equipping, training and fielding of the desired war fighting capabilities. More importantly, there is an absence of clarity on the construct of military readiness and in translating military capabilities into successful battle outcomes (i.e., military effectiveness). In a way, the lack of professional interest in defining and articulating the concept of military readiness is also reflected in the Indian context. It is common to see defence policy makers, practitioners and experts inter-changeably use phrases to explain India's defence preparedness. The only silver lining here is that even some of the most advanced militaries in the world did not accord sufficient importance to the concept of military readiness till the late eighties. In the following section, an attempt is made to map the understanding on the subject issue or the lack of it in the Indian context.

Ambiguity in the Indian Context

In the West, enough data has always been available to enable the evaluation of readiness deficiencies in terms of delayed mobilisation; insufficient hardware and equipment holdings; inability to synchronise industrial surge to meet depletion of war fighting material; manpower deficiencies and training inadequacies. However transparency on such issues has never been the norm in India. Several review committees constituted in the past, such as the Henderson Brooks Committee and the Kargil Committee have highlighted numerous deficiencies in context of the Indo-China conflict in 1962,

and the Kargil intrusions in 1999. For instance, the Kargil Review Committee report states that:

A number of experts have at various times suggested the need to enhance India's defence outlays as budgetary constraints have affected the process of modernisation and created certain operational voids. The committee would not like to advocate any percentage share of GDP that should be assigned to defence. This must be left to the government to determine in consultation with the concerned departments and the defence services. Among aspects of modernisation to which priority should be given is that of equipping infantrymen with superior lightweight weapons, equipment and clothing suited to the threats they are required to face in alpine conditions.⁴⁹

The Kargil report essentially focused on the inadequacies in, decision making at high levels, intelligence coordination, budgeting and modernisation. The causal factors which could have contributed to readiness deficiencies in manpower, material and training in the other military conflicts since independence have seldom been holistically analysed.⁵⁰ The readiness debate therefore often boils down to a simple bean count of military equipment and insufficient defence funding and acquisition.⁵¹ Separately in-house or departmental enquires are not the point of discussion here – as these focus on deficiencies or immediate deliverables at the tactical level. What is

⁴⁹ The Report of the Group of Ministers while citing the contents of Kargil Review Committee Recommendations at Appendix B states that, “one of the major factors influencing Pakistan's aggressive behaviour in 1947, 1965, 1971 and 1999 has been a deliberately cultivated perception of an ineffectual Indian Army and a weak and vacillating Indian Government. Though Pakistan was discomfited in all the four military adventures it undertook, it has attempted to portray each as a narrowly missed victory. It is, therefore, necessary to publish authentic accounts of the 1965 and 1971 wars to establish the facts. It is also recommended that an authoritative account of the Kargil conflict be published at an early date”. See p. 123.

⁵⁰ Kargil Review Committee Recommendations.

⁵¹ See a detailed commentary by Brig Gurmeet Kanwal (Retd) on the modernisation initiatives of the Indian Army at www.kanglaonline.com (Accessed April 21, 2009).

important here is to bridge the gap between these two extreme readiness positions – the macro and the micro - for assessing the deficiencies in India’s military readiness posture/s. The institutional inability to view defence preparedness as an integrated expression among the three services and spanning all aspects of force planning, budgeting, development and application, is perhaps what needs to be addressed. India’s defence policy makers and practitioners need to therefore categorically articulate the “concept” and “context” of military readiness for the armed forces in the short, medium and long term.

To elucidate, the common understanding on military readiness among the Indian defence policy makers, analysts and practitioners has been summarised in a sample survey.⁵² Though the survey sample used is fairly small but it encompasses ex-bureaucrats experienced in defence policy matters and finance, retired military officers who have tenanted important command and staff appointments, senior officials with expertise on national security matters, and some well known security analysts on South Asia. A senior MEA officer defines defence preparedness, “as a multi-dimensional concept which involves a number of perspectives to include proper assessment of threats, conceptualisation of military strategy and tactics, ensuring operational readiness, keeping the morale of troops high, ensuring support of the nation, providing economic and logistic support for the war effort, training and exercises in peacetime, and enlisting deft diplomacy. In the final analysis, war preparedness means having the ability to win a war without fighting one”.⁵³

One military expert argues that defence preparedness can be defined as, “having the capacity (not just military) to deal with any situation affecting India’s vital national interests, requiring

⁵² Each respondent was asked to render a two to three line definition on what they understood by the phrase “defence preparedness” in the Indian context. Personal email dated November 15, 2010.

⁵³ Interaction with Dr. Arvind Gupta, Lal Bhadur Shastri Chair, IDSA, New Delhi dated January 13, 2011.

employment of military power”.⁵⁴ Yet another defines it as, “the nation’s ability to deter likely adversaries/perceived threats from materialising and to effectively prosecute a military operation to reach a desired end state”.⁵⁵ Another expert believes it to be, “the holistic capability to effectively and efficiently shape contemporary security environment in consonance with national security objectives while concurrently ensuring the capacity to do so in the future”⁵⁶ Brig Gurmeet Kanwal, a well-known security analyst, defines defence preparedness as, “the state of national readiness (military and civilian) to deter war and sub-conventional conflict and successfully defeat threats and challenges to national security if deterrence fails”.⁵⁷ According to a former naval officer defence preparedness is the capability of our armed forces to protect the territorial integrity of the nation and safeguard the security of its people and infrastructure, as also our national interests and activities by way of overseas trade, commerce and communications utilising the global commons - oceans, space and cyber space. Defence preparedness would encompass both defensive as well as offensive capabilities to be able to achieve these objectives.”⁵⁸ Another expert argues that preparedness is, “the [nation’s] ability to take on an anticipated threat within a stipulated time period. Both the time element and threat analysis assume criticality as it is not cost effective for any nation to be in an optimum state of readiness at all times.”⁵⁹ Brig Arun Sahgal (retd), a net assessment expert, states that, “defence preparedness is

⁵⁴ Email reply received from Brig Rumel Dahiya (retd), Consultant, Net Assessment, IDSA, New Delhi dated November 16, 2010.

⁵⁵ Email reply received from Air Cmde (retd) Ramesh Phadke, formerly Research Consultant, IDSA, New Delhi dated November 17, 2010.

⁵⁶ Email reply received from Brig (retd) R K Bhonsle, an independent security expert from New Delhi dated November 17, 2010.

⁵⁷ Email reply received from Brig (retd) Gurmeet Kanwal, Director, Centre for Land Warfare Studies, New Delhi dated November 17, 2010.

⁵⁸ Email reply received from Cmde (retd) Ashok Sawhney, formerly India’s naval attaché at Washington DC dated November 16, 2010.

⁵⁹ Email reply received from Maj Gen (retd) Dhruv Katoch, Deputy Director, Centre for Land Warfare Studies, New Delhi dated November 19, 2010.

nature and degree of preparedness to deal with manifest security challenges faced by the state to its national security and territorial integrity. It is a dynamic process and relates to changing nature of threats and challenges.”⁶⁰

From an academic or an analyst’s perspective, Basrur points out that, “defence preparedness is the immediate as well as longer term readiness of a military establishment to respond to all levels of security threat. It encompasses manpower, equipment, technology, intelligence, organisation and leadership”.⁶¹ Sumit Ganguly argues that, “readiness is the ability of a nation’s armed forces to promptly and adequately respond to possible threats, likely and unforeseen contingencies and to be able to prosecute a conflict to meet stated political objectives”.⁶² S. Paul Kapur, a well known nuclear security expert on South Asia says readiness is, “the ability of the armed forces to execute the national military strategy as laid down by the political leadership. Readiness can be further broken down into unit readiness the ability of individual military units to execute their missions as assigned by higher command; and joint readiness, the commander’s ability to integrate disparate combat and support elements into a coherent force to execute assigned missions”.⁶³ Dr. G Balachandran, a noted defence consultant, characterises readiness as the ability of the armed forces to respond to threats that are developing or likely to develop in the future. In his view, military readiness levels must carry a strong correlation to the type and nature of military operations that are likely to be undertaken in the Indian context. Above all, the aspect of readiness needs to be seen in the

⁶⁰ Email reply received from Brig Arun Sahgal (retd), New Delhi dated November 21, 2010.

⁶¹ Interaction with Prof Rajesh Basrur, Director South Asia Programme, S Rajaratnam School of International Studies (RSIS), Singapore dated November 18, 2010 at New Delhi.

⁶² Interaction with Prof Sumit Ganguly, Director South Asia Studies Programme, Indiana University, Bloomington, USA dated December 8, 2010 at New Delhi.

⁶³ Exchange of e-mail with Prof S. Paul Kapur, December 10, 2010, New Delhi.

context of the money, manpower and material required for the armed forces.⁶⁴ It emerges from the foregoing analysis that the the definition of military readiness is quite varied and wide ranging from being defined as India's capacity to "deal with any situation", to "deter likely adversaries or perceived threats", to "prosecute a military operation", to "shape the contemporary security environment", to "deter and defeat conventional and sub-conventional threats", to "protect the territorial integrity", to "safeguard the security of its people and infrastructure", to "take on an anticipated threat in a given time frame", "to respond to all levels of security threats", to "execute the national security strategy" and so on and so forth. While some tend to focus on the operational aspects of the problem such as the likely threats and challenges ("existential", "perceived", "manifest" "futuristic" etc), military response strategies ("deal", "respond", "deter", "defeat", "prosecute" etc), and time frames ("immediate", "short", "medium", "long term", "dynamic" etc), there are others who focus on the national security strategy, defence policy, technology, production, acquisition, and civil-military dynamic. Each of these explanations which are based on the individual's background and professional experience are not enough to fully explicate readiness concerns and strategy in the Indian context.

A study of the levels of military preparedness demonstrated during the past conflicts and crises could help reveal the Indian military's orientation and preferences. While this is important, the monograph refrains from undertaking a detailed analysis of the readiness deficiencies visible during each of India's wars fought since independence. This, in any case, is difficult due to restricted availability of readiness related literature and data in the public domain. At yet another level, most Indian war accounts in the public domain, besides being overly personalised narratives, focus on operational detail with little focus on military readiness or lack of it.

⁶⁴ Interaction with Dr. G Balachandran, Research Consultant, IDSA, dated January 6, 2011 at New Delhi.

Separately a study that seeks to understand the readiness behaviour of the Indian armed forces covering all major and minor wars might prove to be an interesting exercise.

Summary

This chapter examined the problem of military readiness at three fundamental levels: the definitional dilemma surrounding the concept of “military readiness”; its relevance and importance vis-à-vis the other commonly used constructs of “military capability” and “military effectiveness”; and the articulation and ambiguity inherent in the Indian expression. The fine argument being made here is that any military capability to be effective in battle has to be kept “ready and relevant”. While this nuance is well understood among the Western militaries, there is a tendency to often lump “military readiness” with “military capability” in India. This is evident from the survey on the definition of military readiness. Surely India’s defence policy makers and practitioners need greater clarity on the theory and practice of military readiness. The following chapter takes the discussion a step further by making an effort to understand the concept of readiness as articulated world wide and, in that context, its relevance and importance for the Indian armed forces.

3

The Fundamentals of Military Readiness

Introduction

Modern militaries consider military readiness as an important facet of the overall policy, planning and decision making process. This can be gauged from the import attached to readiness by rival powers during the Cold War. This “razor sharp” military readiness came under severe scrutiny on several occasions from peaceniks and security analysts between the years 1980 to 1993.⁶⁵ In June 1994, a study ordered by the Defence Science Board (DSB) on the status of readiness noted with concern the existence of several “pockets” of un-readiness in the US armed forces.⁶⁶ In 1997, the defence administration in the United States appointed a high level bureaucrat to oversee the problem of military readiness.⁶⁷ By February 1998, the services were reporting on a variety of problems, to include inadequate funding for modernisation; increased strain on personnel because of high operational tempos; lower levels of preparedness; and an aging equipment profile. This led to the establishment of the several oversight mechanisms such as the Readiness Task Force, the Senior Readiness Oversight Council and the Readiness Working Group at vital decision making levels. Following the United States example, and particularly its performance during the two Gulf Wars in the nineties, the relevance and importance of military readiness in higher level decision making clearly came to fore. In the United

⁶⁵ The debate can be perused in the Congressional Budget Office paper titled, *Trends in Selected Indicators of Military Readiness 1980 through 1993*, March 1994. The paper discusses the longest established indicators of readiness in five distinct resource areas: personnel quality, level of funding for O&M, depot level maintenance, supply of spare parts and maintenance of real property.

⁶⁶ Les Aspin, no. 13.

⁶⁷ Designated as the under secretary for defence personnel and readiness.

Kingdom, the policy makers too have accorded a great deal of emphasis on assessing and reporting the military readiness levels.⁶⁸ The Russian armed forces evolved complex models to categorise and quantify military readiness. The Australian defence forces designed a distinct model for assessing and reporting their operational readiness.⁶⁹ China's growing military modernisation, and its desire to enhance its global military reach highlights their increased emphasis on the readiness of its land, air mobile and marine forces.⁷⁰

Given the importance being accorded to military readiness by major powers across the world, it becomes important that Indian defence policy makers and practitioners too recognise its relevance with regard to the unforeseen security challenges of the future. This chapter focuses on the theoretical dimension of military readiness and analyses three inter-related and important aspects: the concept and components of military readiness; the contending approaches towards its articulation; and its relevance in the Indian context.

The Concept

Military readiness can be expressed at two levels: one which is fairly broad and the other that is too narrow. In the broader context, the notion of military readiness tends to merge with the construct of military capability. In 1994, the US armed forces for first time defined military readiness as the time taken by the country's combat forces

⁶⁸ The Ministry of Defence is required to render a report on the readiness of the British Armed Forces to the National Audit Office for presentation to the House of Commons. The report is based on a wide ranging review of the departmental documentation and readiness reports prepared by the military chain of command, interview with the key stake holders and field works by the team members.

⁶⁹ See Chapter X, *Australian Defence White Paper 2009* on preparedness of the Australian Defence Forces (pp 87-91).

⁷⁰ *Chinese Defence Paper 2008* states that, "China is working to set up a mechanism for unified and efficient national defence mobilisation, stepping up the mobilisation of economy, science and technology, information and transportation, and making improvements in the building of the reserve force" (p.9). See Richard D. Fischer Jr, *China's Military Modernisation: Building for Regional and Global Reach*, (Praeger Security International; 2008), pp. xv – xix.

to mobilise, deploy and engage the enemy.⁷¹ It was only when Lawrence J. Korb, a high ranking official in the DoD, defined military capability as comprising of four separate constructs of force structuring, military modernisation, military readiness and force sustainability to achieve a specific wartime objective⁷², that the definition on readiness became widely recognised.⁷³ Korb argued that the traditional defence planning methodologies focused too much on issues of force structuring and modernisation, and accorded less importance to aspects of military readiness⁷⁴ and force sustainability,⁷⁵ that is, how well and for how long a force could be employed in battle. In modern times, when conflicts can occur at short notice, the rationale for building military capacity during the warning period might simply not hold good. What is required is a flexible readiness model that ensures an appropriate and timely response to developing military threats and crises situations.⁷⁶ A flexible readiness model would require a better understanding of the “broad-narrow” explanation, the “demand-conversion-shortfall” relationship, and the “threat-capability-time” dimension.

⁷¹ Les Aspin, *Report of the Secretary of Defence to the President and Congress: January 1994* (Department of Defence: January 1994), p. 28

⁷² Chapter authored by Lawrence J. Korb and titled ‘How well can we fight? For how long?’ in *National Security Strategy: Choices and Limits* (Praeger Special Studies: New York, 1984) edited by Stephen J. Cimbala.

⁷³ S. Craig Moore and Co also define readiness as, “the ability of forces, units, weapon systems, or equipments to deliver the outputs for which they are designed (includes the ability to deploy and employ without delays)”.

⁷⁴ Readiness is defined as a two dimensional construct comprising material and personnel. Material readiness is determined by the adequacy of support activities, while personnel readiness is function of military strength, training and aptitude to undertake military operations. This is a factor of lead time and warning period.

⁷⁵ Sustainability is defined as the ‘staying power’ for operations, implying the continued availability of war fighting material. Here, material only includes items consumed or destroyed during war and not the peacetime military infrastructure. The expression also includes personnel sustainability and, is a factor of conflict duration.

⁷⁶ Chris B. Patterson, “Readiness Reporting in 2015”, *Air War College*, February 23, 2007, p. 1, 9 and 22. The research article highlights the vulnerable, uncertain, complex and ambiguous (VUCA) environment of today and the fact that the foreseeable future requires increased operational flexibility and responsiveness.

First, the narrow and broader expressions of military readiness might require detailed explanation. For instance, the professional usage (or narrow usage) of the term readiness focuses more on the immediate war fighting capacities. It relates to the “fill” factor of the armed forces i.e. the availability of manpower, weapons, vehicles and equipment for undertaking military operations.⁷⁷ This as a concept is limited in scope and serves to fulfil only the country’s operational or immediate military readiness needs, and does not in any way provide strategic guidance for policy formulation at the highest decision making level.⁷⁸ This narrow notion does not provide answers to the larger question of resource allocation i.e. the levels of military readiness desired and resources required. In other words, the broader notion describes how ready a force is or should be to win a war; while the narrow definition explains how efficiently existing military units and formations would perform in battle. A useful military readiness definition needs to incorporate both the nuances – broad and narrow.

Second, an American strategist named Richard K. Betts defines military readiness as a function of the time required to field the desired military capability on the battlefield. This can be expressed at three levels:⁷⁹ One, it is the relationship between the available time and the required military capability. Two, the time required to convert potential military capability into actual war fighting capability. And three, the operational readiness gap that would still exist between the actual and potential military capability. A country may prove not to be militarily ready when the potential military capability is inadequate to meet the country’s perceived threat levels. These levels

⁷⁷ Some commonly used indicators for operational readiness are mission capable rates, mean time between failures, average time to repair components, maintenance backlogs, days of peacetime stocks at hand, days of war wastage reserves, flying hours, steaming hours, training days etc. See Betts, no. 10, p. 26.

⁷⁸ Betts, no. 10, p. 27.

⁷⁹ The gap between supply and demand of readiness does not necessarily reflect unreadiness since few countries may rely on alliances to create requisite defence potential.

cited above clarify the aspects of “demand”, “conversion” and “shortfall” in military capability, and therefore, can be argued as the correct explanation of military readiness. Anyone of these factors if taken in isolation might not be able to explain the lack of or an excess of military readiness. Excessive military readiness can affect the overall socio-economic development of the country, while the lack of it can have serious security consequences.

Third, the common military understanding is rooted in the assumption that readiness consists of some ideal level which is to be attained or maintained. This necessitates identification of components that increase readiness by allocating resources until the desired levels are achieved. It will involve a trade off at three levels: Readiness for what? (i.e. for which threat/s); Readiness of what? (i.e. of which military components); and Readiness for when? (i.e. at what time). In other words, this implies identifying the type and nature of military forces required, and time required for organising, equipping, training and fielding to meet the envisaged military threats and challenges.

The Contending Expressions

To put it simply, the concept of military readiness in an overall sense should be seen as the timely availability of combat forces, and for how long it can fight on the battlefield. The linear view of military readiness normally associates the availability of time to conversion of potential capability into actual military capability. The lesser the time available, the limited will be the military capability created or deployed. This necessitates an understanding on the emerging nature of conflict and circumstances leading to the conflict so that the required capability can be generated in good time. The relationship between “speed” and “effectiveness” helps us to analyse military readiness at three levels.

- First, it is the aspect of operational readiness. This is an “inward looking” standard for determining the efficiency of a military unit or field formation. It defines the immediate fighting potential in terms of the military personnel, training, equipment and maintenance levels. It involves upgrading the actual capability of a military unit to its potential, by making

available mass i.e., the designated manpower and military equipment as efficiently as possible, and that they are well trained and the equipment is in serviceable and easily deployable condition. It indicates how proficiently a military unit or a field formation might fight, but not whether it will win a battle.

- Second is this issue of structural readiness. This is an “outward looking” standard which is concerned with how many military units or field formations and weapon systems are available to deal with the enemy or how long it may take to put these men and material into action. It involves converting the potential inherent in the nation’s economy into military mass, before a military crisis makes a call on the nation. It indicates the relative military effectiveness needed to successfully fight the enemy. In fact, it helps in establishing limits of the potential military capability during the time available before general or partial mobilisation, and it is within these limits that the earlier explained construct of operational readiness becomes meaningful.
- And third is this important aspect of mobilisation readiness. Military mobilisation is a function of the national strategic infrastructure such as the railroads, sea ports, air ports and the industrial capacity to produce and supply the war fighting material. It includes the timely movement and deployment of fighting units and field formations. There is often a tendency amongst the military commanders to hasten the mobilisation effort, so that the combat potential unfolds as quickly as possible, and in an organised fashion. Coordination and sequencing of men and material with speed and efficiency therefore becomes a crucial planning issue. It requires the government and its several agencies to maintain up to date knowledge of military plans, organisations, structures, and standby mechanisms that enable them to quickly convert raw resources into capabilities, and at efficient costs.

It is often argued that, while operational readiness can be boosted in few hours, days or weeks, it may take months or even years to expand the size and structure of the armed forces i.e. to recruit, organise and train soldiers, research, develop and produce weapon

systems and mesh them together as fine fighting units.⁸⁰ Operational readiness is about effectiveness in battle when there is no time for “pulling up socks” whereas structural readiness is to see whether a military force is effective enough if sufficient time is given to “pull up socks”. A certain level of structural and operational readiness resides in all armed forces, but the national capacity to coordinate conversion of the country’s economic and industrial potential into useable military strength is equally important. At the political level, this will imply the intervention of the government to re-direct the allocation of 3Ms (money, manpower and material) towards the production of military technology, operational skills and the overall fighting potential. It is also well known that military mobilisation is a multi-agency process which entails the creation and forward deployment of a “war economy” almost overnight and one where the military priorities and commodities take priority over the needs of the common citizenry.

Relevance in the Indian Context

Given the size and structure of the Indian armed forces, and the likely roles and missions that might come their way, there is an express need to evolve an understanding on the theory and practise of military readiness. A cursory analysis of our defence preparedness needs will suggest that, while India needs to achieve certain levels of “operational” readiness vis-à-vis Pakistan and in order to deal with festering insurgencies and internal unrest; the country needs to work on the “structural” aspects of readiness when it comes to dealing with the continental and maritime threats from China. It might be interesting to highlight the subtle distinction between operational and structural readiness in the Indian context. The historical animosity with Pakistan and fears about rapid Chinese military modernisation can be used to explain the relevance and importance of military readiness in meeting future challenges and threats.

⁸⁰ Betts, no. 10, p. 42.

Geographically India's western borders with Pakistan are vast and varied. The heavily contested glaciated sector where the control of territories is defined by the actual ground position line (AGPL)⁸¹; the mountainous and hilly terrain in the state of Jammu and Kashmir along the line of control (LoC)⁸²; the international boundary (IB) that runs along the plains and semi-desert oblique desert terrain in Punjab and Rajasthan respectively, and down to the marshlands of Gujarat; and finally a stretch of maritime boundary in the Sir Creek area. A few aspects must be noted. Each type of demarcation i.e., the AGPL, the LoC or the IB has politico-military dynamics which are specific and defined by the local geography, and the past history of military animosity. Quite clearly, the military animosity between India and Pakistan can be explained by the Militarised Interstate Dispute (MID) dataset prepared by the Correlates of War (COW) Project.⁸³ The dataset reveals that the total number of military "dispute" days between India and Pakistan from August, 1947 to December, 2001 works out to some 6993 days. These, when averaged out over the period of review (i.e., 22,995 days from the year 1947

⁸¹ The Siachen Glacier lies in the Karakoram Range at elevations above 20,000 feet. The glacier is some 75 kilometres in length with the valley bed ranging width from two to eight kilometres. The roots of the Siachen conflict can be traced back to the demarcation of the CFL in the Karachi Agreement of 1949. In the Karachi Agreement, the CFL was demarcated up to NJ 9842 and beyond that the agreement stated that CFL shall 'thence run north to the glaciers'. The Siachen problem principally stems from the interpretation of this crucial phrase. The AGPL signifies the actual ground position of the two armies in the glaciated sector which lies approximately North of Leh.

⁸² The nomenclature Line of Control (LoC) came into being post the Shimla Indo-Pakistan talks in 1972 wherein a decision was taken to convert the CFL into the LoC reflecting the disposition of troops after the 1971 war.

⁸³ <http://www.correlatesofwar.org/COW2%20Data/MIDs/MID310.html> (Accessed September 9, 2010). The COW project essentially seeks to facilitate the collection, dissemination, and use of accurate and reliable data for analytical work in the field of international relations. Among the several data sets made available by this project, the Militarised Interstate Disputes Version 3.10 (MID v3.10) has been used to explain the military behaviour between the two countries from independence till the year 2001. The dataset demonstrates that the relationship between the two countries is highly militarised and has led to repeated tensions and conflicts in the past. The COW dataset is essentially a description of the military conflicts in terms of the "use of force", or the "display of force", or the "threat of force" in a given situation.

till 2001), works out to nearly one “military dispute” every three days. At yet another level, Pakistan has long waged an asymmetric war against India. India needs a sound deterrent strategy to deal with Pakistan’s continued support to acts of terror, and make them pay a high price for resorting to asymmetric warfare. However from a military stand point, India faces severe “time-space” problems when it comes to responding to any act of terror. In the “time” dimension, the Indian armed forces require some time to mobilise, which in turn allows the international community to pressurise India against undertaking a retaliatory action. In the “space” dimension, the Indian armed forces cannot progress an action against Pakistan beyond a certain point without potentially tripping the nuclear red lines. The fundamental military challenge for the Indian armed forces therefore is how to solve these twin problems of “time” and “space”. The answer perhaps lies in maintaining requisite levels of “operational” and “structural” readiness that can help deliver punitive military strikes at short notice.

Besides the state of Pakistan, there is a more compelling case for military readiness that is posed by the People’s Republic of China. The Chinese military modernisation and infrastructural development in Tibet has raised immense security concerns in recent decades. A rising China presents a serious challenge to countries across the world. And, while one might debate the pace and trajectory of China’s rise, the People’s Republic of China has already made its military presence felt in the Indian neighbourhood.⁸⁴ On the one hand, China has promoted economic interdependence between the two countries, while at another level, not missing an opportunity to assert themselves diplomatically or militarily against India’s interests and concerns. China’s infrastructural development across the Tibetan plateau and their commercial sea ports and listening posts in the Indian Ocean region (IOR) are our major security concern. Coupled with the land routes built across the states of Pakistan and Myanmar, the “dragon’s hug” over the Indian state seems complete. China’s

⁸⁴ Workshop report titled, “Assessing China’s Rise: Power and Influence in the 21st Century”, Massachusetts Institute of Technology, February 27-28, 2009.

increased political, economic, diplomatic and military influence in the neighbouring states of Nepal, Bangladesh and Sri Lanka is now a matter of concern. China's military power and influence surely demands that India focus on the "structural" aspects of readiness such as, strategic rail and road infrastructure in the border areas, and restructuring of existing combat capability and logistical capacities in the mountainous regions. Exploitation of asymmetric capabilities by our adversaries in the form of emerging technologies ranging from improvised explosive devices, cyber attacks and electronic warfare, battlefield robotics and precision munitions, and long range guided missiles could have severe implications for India's security in the future.⁸⁵

The foregoing analysis highlights the relevance and importance of military readiness in the Indian context. As has been argued in the first two sections of this chapter, the construct of readiness spans a wide range of issues and ideas at the macro and micro level to include buying, maintaining and sustaining required levels of military capability, and the ready availability, affordability and trainability of the combat manpower. India's long and porous borders both at land and sea, and some of which highly contested and disputed, demonstrate the need to maintain reasonable levels of military readiness. Besides the prevailing internal security situation and other non-traditional tasks will continue to place heavy demand on the preparedness of the Indian armed forces in the future.

Summary

This chapter focused on the theoretical dimension of readiness at three inter-related levels: the concept of military readiness; the contending voices in its articulation; and its relevance in the Indian

⁸⁵ http://www.rsis.edu.sg/cens/publications/conference_reports/RSIS_ICEDT%20Report_171109.pdf

context. The concept can be expressed in several different ways but what is important for a defence policy maker and a practitioner is to establish the demand and shortfall in levels of military readiness at any given point of time. This can be further explained by the ability and proficiency of the state to convert raw resources into military capability over time. At yet another level, the concept can be expressed at several levels such as operational, structural and mobilisation related readiness. India's difficult neighbourhood places a heavy demand on the military readiness needs of the country. Six decades of military experience has taught one important lesson - and that of maintaining ready and relevant forces to meet the unforeseen security challenges of the future.

4 Readiness Experience in Modern Militaries

Introduction

This chapter attempts to analyse the readiness concepts and practices in vogue with four major armies of the world. These include the United States, the United Kingdom, People's Republic of China and Australia. While the United States, United Kingdom and Australia have invested a great deal of intellect and effort in defining and articulating their practises and procedures, same cannot be truly said about the Chinese armed forces. The existing understanding on China's approach towards readiness is rather limited, and much of it is derived from the pace of its military modernisation. Simplistically, it can even be gauged from its military posture along the Taiwan Straits, naval hostility in the South China Sea, and diplomatic and military pronouncements over unresolved border disputes. In the Indian context, China's strategic assertiveness in the Himalayas and the Indian Ocean Region (IOR), coupled with its constant search for infrastructural capacities in terms of road, rail, air and port facilities, is partly a reflection of their focus on building structural readiness in the medium to long term. Same can be said of Pakistan as well. In this context, India too needs to establish the country's military readiness concerns and strategy vis-à-vis its adversaries, and for which the study of modern readiness concepts becomes essential.

United States

Military readiness and sustainability have been subjects of intense research in the United States.⁸⁶ The DoD defines military readiness

⁸⁶ S. Craig Moore, *Measuring Military Readiness and Sustainability*, RAND and NDRI Publication, 1991; US General Accounting Office, *Military Readiness: Congress Needs Better Tools for Effective Oversight*, Testimony, March 18, 1998; US General Accounting Office, *Military Readiness: Current Indicators Need to be Expanded for a More Comprehensive Assessment*, April 21, 1994; US General Accounting Office, *Military Readiness: Improvements Still Needed in assessing Military Readiness*, March 11, 1997.

and sustainability as important constituents of the overarching concept of military capability. It believes that absence of readiness could invite military adventurism from adversaries, and if conflict is actually joined, readiness shortfalls could pose serious consequences. Given the military's size, mix and technological capabilities, the country's policy makers and practitioners feel that it is important to understand as to how much the armed forces could do in a given situation. These inputs together with resource costs and fiscal limitations can help decision makers choose funding to meet the readiness and sustainability objectives.

In the early decades, the two constructs of "readiness" and "sustainability" were considered distinct, and the United States armed forces used separate mechanisms to measure and interpret this data. In recent years, the concept of status of resources and training (SORTS) and days of supply (DOS) have collectively emerged as an important reflection of the readiness and sustainability status. The former reflects the status of personnel, training and equipment that a unit or a field formation possesses at any given time. The latter is reflected in terms of the numbers of days of supply (DOS) held at each level of command. Both reflected only on the `inputs` and not the `output`, and the operational implications could not be truly inferred. The SORTS data ignored improvements in unit status due to cross-levelling of resources, logistical dependencies and improvement in training standards. Similarly, the DOS figures failed to reflect the assumptions on placement and consumption of the war fighting material. However in the recent decades, the US armed forces have undertaken significant measures to expand their understanding on structural and operational readiness needs. Frequent large scale deployments in Eastern Europe, Iraq and Afghanistan, and the expeditionary combat experience gained thereof have immensely contributed towards the conception of robust readiness measurement concepts, metrics and mechanisms.

A chronological review of the improvements made may be relevant. In the year 1991, the Defence Advisory Group in the United States approached RAND Corporation to review the existing measures of military readiness, and suggest a strategy for improved measurement to serve higher level military decision making. The

study identified several measures which could improve the readiness reporting and analysis framework. First and foremost, it observed that the DoD had for several decades linked readiness and sustainability to fiscal and funding levels. Since high level decision makers need to understand the degree to which the military posture could underwrite a nation's security, the report argued that it was necessary to look beyond issues of immediate resource availability and budgetary allocations. In their view, readiness could be examined at a range of levels: training and practice; full equipment and manning; spare parts and maintenance; stockpile of material; quality of manpower; force structure mix; means to mobilise forces and expedite military production; and efficient management of resources. And if, readiness and sustainability are particularly important and cost so much, then the high level decision makers ranging from the President and the Congress down to the individual service headquarters would want to know where these various components of military capability actually stand.

The study argued the need to evolve an integrated readiness and sustainability assessment framework by linking information at several levels: peacetime operational tempos and training levels; deployment pattern and options; positioning of stockpiles; mobilisation timings and capacities; and the actual level of combat activity. It was felt that the information presented in specific terms such as assets and stockpile reports, mobilisation analysis, and deployment and material distribution analysis could substantially improve assessments that were relevant to high level decision making. Such assessments could reveal inconsistencies in readiness levels, and in turn enable the decision makers to question the consistency between readiness and the national security concerns and objectives.

Consequently, the US armed forces today assess readiness at three levels: unit readiness; force readiness; and sustainability issues. Emphasis on unit readiness reporting and management is gradually shifting away from minimising inventory shortfalls towards minimising the length of time required to achieve the specified performance levels. Force readiness is influenced by the performance levels of units that provide transport, handle and manage logistics; operational deployment and tempos; stockpiles and mobilisation

timings. Sustainability is seen in terms of the consistency and adequacy of the support services. The feasibility of assimilating and integrating readiness assessments and reports at these three levels is considered essential.

United Kingdom

In the United Kingdom, the Department of Defence has developed a sophisticated system for defining, measuring and reporting the readiness levels of its armed forces.⁸⁷ The readiness of individual units is assessed, and which is then aggregated to give an assessment of the larger fighting formations. Since it is impractical to afford readiness for all operational scenarios, the Department of Defence focuses on readiness for a range of “scales of war effort”, as identified in the Strategic Defence Review of 1998 and the Defence White Paper of 2003.⁸⁸ Accordingly, the department has developed a set of Defence Planning Assumptions (DPAs) which explain the scope and extent of medium and small scale deployments. The process of readiness is typically seen at three levels: manning levels; equipment support; and collective training. In terms of the timings, it includes the decision, deployment and in-theatre preparation time which is ranked from “immediate” to “very low levels of readiness” (notified as RO to R11).⁸⁹ For instance, the RO level signifies that a force is appropriately manned, equipped, trained and ready to deploy; while the R11 status implies that a unit may require around 365 days to be prepare and deploy.

The readiness categories are aggregated as they proceed up the chain of command to feed into the quarterly readiness reporting for decision making at higher levels. The quarterly readiness report defines the ability of a force to undertake future operations in three

⁸⁷ “Assessing and Reporting Military Readiness”, National Audit Office, London, The Stationery Office, June 2005.

⁸⁸ Secretary of State for Defence, “Delivering Security in the Changing World”, London, The Stationery Office, 2003.

⁸⁹ “Assessing and Reporting Military Readiness”, National Audit Office, London, The Stationery Office, June 2005.

measures from B1 to B3. The first measure (B1) reflects the military capability that the services have undertaken to deliver within the constraints of the defence budgeting and the position with regard to specified peacetime readiness levels. The second measure (B2) provides an assessment of the ability of those elements which are ready to deploy; and the final measure (B3) explains the ability to conduct and sustain large scale military operations. Until recently, the military system focussed on the peacetime elements of readiness i.e. B1 with relatively less emphasis on B2 and B3. But lately the department has begun to better define these requirements in terms of the logistical support and the overall war fighting capability required. The actual state of both peacetime readiness needs and future contingencies is reported through a traffic light system shown as green (satisfactory), yellow (minor weakness), amber (serious weakness) and red (critical).⁹⁰ Here the endeavour is to reduce the percentage of combat units categorised critical or serious on a yearly basis. The reporting to stakeholders outside the Department of Defence is carried out through the Public Service Agreement (PSA). A PSA reports the overall improvement made in generic terms over a period of three years with regard to the peacetime readiness, and the ability of the combat units and formations to graduate to immediate readiness levels and deploy them in battle. Though difficult, the department has adopted a pragmatic approach to improve the coverage of measures incorporated in successive PSAs. Since any graduated military readiness system has inherent risks, the Department of Defence has evolved a risk reporting system that reports quarterly to the Defence Management Board. These risks are managed against the backdrop of an unpredictable security environment and military activity levels. In recent years, the Department of Defence has considerably improved its reporting system keeping in mind the broad shift towards expeditionary operations. It recognises that an unpredictable security environment and high tempo increases the risks to military readiness and sustainability.

⁹⁰ Ibid.

Peoples Republic of China

China's military build-up is unmistakable and large, and its record of using force is no less encouraging. Modernisation and consistent increase in defence spending since the late 1980s warn us against a militarily restless and aggressive China. China's claims in the South China Sea and its continued military build up on its east coast and offshore military exercises reinforce the counter argument against those who take the "China threat" a bit mildly. Several experts argue that Chinese military modernisation needs need to be analysed in context of the emerging military doctrines and readiness levels. China continues to modernise its army and assert its political and strategic interests, but the moot issue is how does it prepares itself to meet its security objectives. The American high technology applied during the first Gulf War literally shocked the PLA into prioritising readiness as the key issue for military study and reform.⁹¹ Ever since, it is gripped by the importance of military technology on a modern battlefield. But then the PLA also believes that technology cannot be the sole criterion to wage war. In their view, the RMA is to be built upon the interaction between technology, concepts and organisations. Ka Po Ng argues that the Chinese military modernisation has interestingly oscillated between "structural" and "operational" readiness as the PLA doctrinal conceptualisations moved from "total war" to "local war" conditions.⁹²

The current doctrinal thinking about local war under hi-tech conditions dictates that operational readiness dominates the PLA thinking, planning, and development of PLA force structures. The "local war" doctrine driven concept of readiness is relevant not only in light of RMA but in its view on military affairs in general. Deng Xiaoping, in as early as 1975, has said that the military reforms will have to centre around two issues: organisational correction and greater emphasis on war preparation. Corrections were to be made

⁹¹ Ibid, p. 30.

⁹² Ka Po Ng, *Interpreting China's Military Power: Doctrine makes readiness*, London, Frank Cass, 2005.

in terms of cleansing the PLA of fluff and arrogance, and the development and acquisition of military hardware to fight the future wars. The second part concerning preparations for war was considered more important. While the two were considered inter-related, Deng emphasised the importance of war preparation, and elucidated it at five levels: creation of rational force structures, induction of modern weapons, strengthening the reserve component, training and investing in advanced military theories.⁹³ In the contemporary age, when technology gains increasing attention, the PLA leadership does not discount the need to establish a relationship between the ‘heart-ware’ and ‘hard-ware’ to achieve their doctrinal objectives.⁹⁴ During Deng Xiaoping’s time the objective of military reforms focussed on enhancing the combat capability by building a strong, modernised and regularised revolutionary army (*xiandaihua, zhengguibua gemin jundui*); while it was during Jiang Zemin’s time that the spotlight shifted to war preparation (or operational readiness) by simultaneously undertaking concepts of “mechanisation” and “informational-isation” of the battlefield.

Australia

The Australian Defence Forces (ADF) too accord significant importance to the aspects of military readiness and sustainability during operations.⁹⁵ The Defence White Paper 2009 devotes a full chapter on defence preparedness, force levels and preparedness goals, and measures to improve readiness levels. The ADF believes that the governmental judgements and decision making about military preparedness are important for strategic and cost reasons. Striking a balance between maintaining some forces at high levels of preparedness and others at lower levels, if the strategic outcomes

⁹³ Ibid. p. 35.

⁹⁴ The phrase ‘heart-ware’ has been borrowed from writings of Ho Shu Huang, an Associate Research Fellow with S. Rajaratnam School of International Studies, Singapore. <http://www.rsis.edu.sg/publications/Perspective/RSIS0732010.pdf>.

⁹⁵ Australian Government, Department of Defence, “Defending Australia in the Asia Pacific Century: Force 2030”, Defence White Paper 2009.

have to be optimised with the resources invested in defence by the Australian government, is critical. Having forces at high levels of readiness in order to respond rapidly and efficiently in a contingency comes at a cost. The higher the military preparedness levels, the higher the cost of maintenance to the state. The cost of military preparedness is driven by several important factors: the timeframe within which the forces must be ready for undertaking contingency operations; the expected duration of the contingency situation; the quantum of military forces expected to respond; the professional skills and the pre-deployment training required to deliver the desired effect; and the complexity of the resources and equipment required to be used. In other words, units at a very short notice to move cost more to maintain.⁹⁶ In order to retain organisational balance, the ADF holds some forces at high states of readiness to commit to short notice operational contingencies, and other at relatively lesser levels of readiness. The ability to undertake military operations over time, also known as sustainability is an important planning factor in the Australian Defence Forces. This includes aspects of troop rotation, the serviceability of major platforms and other equipment, the quantity of available supplies and replacement items, and the ability to execute critical functions such as sea and airlift at heightened levels of operational activity.⁹⁷ Sustainability is also influenced by the capacity of indigenous industry or global consortiums to provide contracted support services, maintain, repair and replace equipment, generate supplies, provide specialist skills, and contribute to reorganisation and reconstitution on conclusion of the mission.

The Australian Defence Forces also emphasise the concept of concurrency, as an important aspect of military readiness.⁹⁸ Concurrency implies the ability of the force to conduct a number of operations in separate locations simultaneously. It is believed that concurrency of operations though possible could be constrained

⁹⁶ Ibid, p. 87.

⁹⁷ Ibid. p. 87.

⁹⁸ Ibid. p. 88.

due to overstretching of joint enabling structures needed to support and sustain such forces over long distances. The Australian government has decided that in return of the defence funding to be provided in years ahead, the armed forces must be able to maintain prescribed levels of operational capability measured against force levels and performance goals. The preparedness demands on the ADF have been placed in relation to the base level of capacity, and readiness, sustainability and operating limitations. In fact, the preparedness goals have been clearly articulated and represent what the future force, when fully built, must be able to do without further significant mobilisation of other national resources. The Australian government, as part of the white paper writing process, reviewed its readiness management arrangements to provide greater transparency on preparedness and operating costs. The review opined that there was a greater need to refine the preparedness management framework by better aligning the country's strategic guidance, military preparedness goals, the operational activity level, and to optimise the resources available for frontline combat action. The refinement of the preparedness framework is seen at three levels: the development of a comprehensive preparedness decision support capability; the reform of personnel costs, policies and processes; and the development of relevant information system and skills to ensure better control of personnel and operating costs.⁹⁹

The ADF also accords equal importance to aspects of surge in order to rapidly increase its capabilities to field its force levels and preparedness.¹⁰⁰ It intends to further enhance the High Readiness Reserves (HRR), a category of part time service that allows for some part-time personnel to be held at much higher readiness levels for deployment than most of the other reservists. For instance, the ADF's six company sized army combat teams made up of HRR personnel are available for protection of points of entry at short notice amongst other HRR teams earmarked for assistance to the civil communities; the air force reserves too contribute to augment

⁹⁹ Ibid. p. 89.

¹⁰⁰ Ibid. pp. 90-91.

actual operational capability by providing just-in-time personal surge for overseas operations; and the navy too continues to work towards providing surge capacity for all naval force elements. At yet another level, the ADF strongly believes in the use of commercial contractors in secured environments to re-deploy, reconstitute and prepare for subsequent phases of military operations. Similarly, it accords significant importance to needs of national mobilization resources in terms of transportation system, logistical capacities and health services in order to meet operational shortfalls with regard to availability of full time forces for Australian defence needs. In continuation, the ADF believes that timely procurement, containment and industrial support are critical towards building the defence capability needs and the operational effectiveness. The processes of defence procurements too have undergone significant reform over these years in form of the Defence Procurement Review of 2003 (also referred as the Kinnaird Review).¹⁰¹ In recent years, the follow up reviews such as the Mortimer Review have recommended a more commercially focused procurement process in order to promote improved defence outcomes in the future. The current preparedness focus is on greater accountability, timely acquisitions, and a strong relationship with the stake holders across the spectrum.

Some Lessons in the Indian Context

The foregoing analysis illustrates the expanse of understanding on readiness issues among modern militaries in the world. These case studies highlight three important issues in the Indian context: the necessity of theoretical rigour in understanding readiness concepts and processes involved (example, US, UK and Australia); clear articulation of the security concerns and readiness strategy (US, UK, PRC and Australia extensively do it through public testimonies, detailed audit reports and public pronouncements); and the importance of metrics and mechanisms to mend deficiencies in readiness postures (US and UK clearly excel in this field). The

¹⁰¹ Ibid. p. 125.

militaries in the west have invested in a great deal of expertise and effort at the legislative, bureaucratic and operational level to ensure that the readiness needs are actually met (e.g. HASC, GAO, CBO, DoD and QDR reports, SORTS and C-ratings in case of US; MoD and HAO reports, RO-R11 and B1-B3 ratings in case of UK). China true to its strategic culture and acumen explains military readiness through phrases such as mechanisation and informational-isation. In the Indian context, this calls for drawing attention towards appropriate standards to measure and analyse the readiness levels. To begin with, the Lok Sabha Standing Committee on Defence could invest in research and analytical capacities that enable them to examine issues of readiness with far greater purpose and clarity. This would assist the Indian defence establishment in enabling top down understanding of our readiness needs, priorities and articulation. In due course, the three services could define common metrics and mechanisms to address the overall health of the armed forces.

Part-II

India's Military Readiness Concerns



5

Establishing India's Security Concerns

Introduction

India's grand strategy is gradually evolving and making significant strides. Emerging strategic partnerships with the United States, Russia, France, Japan and other countries, expansion of trade with China and ASEAN, new initiatives in Africa, developmental efforts in Afghanistan, maritime cooperation in the Indian Ocean Region (IOR) and its firm stand on issues of global importance such as nuclear disarmament, trade and climate change highlight its increasing influence. In this context, India's long-term security needs cannot be seen merely in terms of resolving its long standing territorial and boundary disputes. Other factors that need to be taken into account are the dangers arising from nuclear proliferation, the presence of extra-regional and potentially hostile powers in the neighbourhood, and the growth of conventional and nuclear capabilities of inimical powers in the region. In addition, the land warfare and maritime dimensions, insurgencies and internal security, humanitarian assistance and disaster relief, and mandated UN peacekeeping deployments, will continue to engage India's armed forces.

This chapter attempts to establish India's military readiness concerns in light of the prevailing geo-strategic environment, the critical security challenges and threats India faces, the military imperatives and implications that will define the readiness needs of the future.

Geo-strategic Environment

There has been much recent discussion about the rise of Asia in recent decades.¹⁰² For instance, Kishore Mahbubani asserts that Asian

¹⁰² Friedberg, Aaron L., "Introduction", in *Strategic Asia: Power and Purpose*, Expanded Executive Summary, The National Bureau of Asian Research, 2001–2002, pp. 17–18.

countries are briskly absorbing the western best practices, innovation and technology, because of which it is likely that by 2050 the world's three largest economies will be in Asia i.e. China, India and Japan.¹⁰³ Fareed Zakaria argues that economic growth is creating a new global landscape where economic power and wealth are shifting from the well-known and prosperous states to lesser known countries such as China, India, Brazil, Russia and South Africa, described in his words as the “rise of the rest”.¹⁰⁴ In this context, the United States Quadrennial Defense Review (QDR) 2010 states that “the rise of China, the world's most populous country, and India, the world's largest democracy, will continue to shape an international system that can no longer [be] easily defined”.¹⁰⁵ Some analysts argue that the rise of these new global players and the challenges they pose to the United States' strategy could be quite wide-ranging and difficult. A few predict that the Chinese could even eclipse their primacy in the foreseeable future. Accordingly, the United States is attempting to build strong bilateral relationships with China and India at several levels.¹⁰⁶ But it is obvious that this strategic engagement will be leveraged by the United States to preserve its influence in the region.¹⁰⁷ It is apparent that the relative economic power of countries such as China and India has substantially increased, while that of Japan and Russia has declined.¹⁰⁸ At another level, Japanese, Indian and Russian planners worry about the Chinese economic growth and rise of their military might.

China's brisk economic growth has raised the stakes for global competition in terms of capital formation, capacity building and

¹⁰³ Mahbubani, Kishore, “The New Asian Hemisphere: The Irresistible Shift of Global Power to the East”, *Public Affairs*, 2008.

¹⁰⁴ Zakaria, Fareed, *The Post-American World*, W.W. Norton & Company, 2008.

¹⁰⁵ Executive Summary, *Quadrennial Defense Review Report 2010*, p. iii.

¹⁰⁶ Ellings, Richard J., “Preface”, *Strategic Asia: Challenges and Choices*, 2008–2009, p. ix.

¹⁰⁷ Tellis, Ashley J., *Preserving Hegemony: The Strategic Tasks Facing the United States*, 2008–2009, p. 3.

¹⁰⁸ Friedberg, no. 90, p. 19.

military capabilities.¹⁰⁹ Its military modernisation has raised concerns at the regional and global level. In retrospect, several countries in Asia while engaging with China are upgrading their conventional military capabilities to cope with growing strategic uncertainties in the region.¹¹⁰

The defence strategies adopted by different countries are reflective of their specific threat environment/s, security perceptions and military capabilities.¹¹¹ The Chinese in turn fear encirclement by a strategic alliance between the United States and Japan (and lately India). Besides, there are enough strategic incentives for countries within the region to acquire nuclear weapons.¹¹² Six of the eight declared nuclear weapon states are in Asia. And above all, the unresolved territorial and boundary disputes could create precarious politico-military situations, where inadvertent miscalculations or irrational behaviour could spark off a conflict between the nuclear states.

India's growing international stature and economic clout places an increasing demand on its armed forces.¹¹³ In the context of India's growing influence, the QDR 2010 states that, "as India's economic power, cultural reach and political influence increase, it will assume a more influential role in the global affairs and world politics".¹¹⁴ Undoubtedly, India's strategic challenge would be to secure its economic, territorial and energy interests, in the wake of China's

¹⁰⁹ Ellings, no. 94, p. ix.

¹¹⁰ Tellis, Ashley J., "Military Modernisation in Asia", in *Strategic Asia: Military Modernisation in an Era of Uncertainty*, Expanded Executive Summary, The National Bureau of Asian Research, 2005–2006.

¹¹¹ Ibid.

¹¹² Reiss, Mitchell B., "Prospects for Nuclear Proliferation in Asia", in *Strategic Asia: Military Modernisation in an Era of Uncertainty*, Expanded Executive Summary, The National Bureau of Asian Research, 2005–2006.

¹¹³ Baldev Raj Nayar and T. V. Paul, *India in the World Order: Searching for Major-Power Status*, Cambridge, Cambridge University Press, 2003.

¹¹⁴ *U.S. Quadrennial Defence Review*, February 2010, p. 60.

rise and the possible decline of the United States. Interestingly, the QDR 2010 also observes that,

India's military capabilities are rapidly improving through increased acquisitions, which include long-range maritime surveillance, maritime interdiction and patrolling, air interdiction, and strategic airlift ... and it has already established its influence through counter-piracy, peacekeeping, humanitarian assistance, and disaster relief efforts ... and as its military capabilities grow, India will contribute to Asia as a net provider of security in the Indian Ocean and beyond.¹¹⁵

The era of globalization presents an opportunity to enhance India's strategic interests both at home and abroad. But then the country needs to undertake significant internal reforms to deal with the changing geo-strategic environment and develop appropriate security structures that would enhance its role and leverage. However these reforms can be possible only if a reasonable assessment of India's security threats and challenges can be made. The following section maps the key threats that India faces which in turn dictate the demand on military readiness in the future.

Challenges and Threats

India occupies a predominant geo-strategic position in South Asia. The country shares its land borders with six countries: China, Bangladesh, Myanmar, Nepal, Bhutan and Pakistan, a total of approximately 14,863 kilometres.¹¹⁶ The extended and arduous land borders coupled with a long coastline of 7,863 kilometres, and an equally large exclusive economic zone (EEZ) presents a formidable security challenge. India's territorial and maritime security concerns are accentuated by cross-border terrorism, non-state and trans-national actors, illegal migration, drug trafficking and organized

¹¹⁵ Ibid.

¹¹⁶ Brig Gurmeet Kanwal, *Indian Army Vision 2020*, Harper Collins Publishers, New Delhi, 2008, pp. 90–91.

crime. This section attempts to analyse some of the critical security challenges and threats that India faces now and is likely to encounter in the foreseeable future.

- **Border management:** The employment of security forces along India's extensive land and sea frontiers compounds the internal security problem.¹¹⁷ Issues of uneven efficacy and organisational control among the myriad security agencies deployed along the land and sea frontiers remain.¹¹⁸ It is thus axiomatic that the poor management of the country's land borders has led to volatile internal security situations. Gaps in border security have contributed to the rise of insurgency in the border states of Jammu and Kashmir, Punjab and the North East in the past. The long and porous borders with countries such as Bangladesh, Myanmar and Nepal have allowed illegal cross-border migration and the movement of terrorist groups. In the case of Bangladesh, the issue of Indian enclaves within Bangladesh and vice versa remains particularly sensitive. Similarly, sporadic Chinese intrusions continue despite the many confidence-building measures undertaken in Arunachal Pradesh and eastern Ladakh. Chinese intransigence in exchanging maps to lay claim to Indian territories further complicates the issue. In the west, infiltration by Pakistan-abetted terrorist groups continues to be an irritant.
- **Internal security:** India has witnessed various shades and hues of internal unrest, secessionist insurgencies and armed rebellions since its independence.¹¹⁹ Early insurrections have

¹¹⁷ Ibid, p. 95.

¹¹⁸ Brig. R. K. Bhonsle (Retd.) argues that border management and internal security as challenges should now be taken on by the central paramilitary forces given their growing numbers, and capabilities which will come gradually. In his view, this would enable the Indian Army to focus on dissuasive and deterrent tasks. E-mail dated May 7, 2010.

¹¹⁹ S. Kalyan Raman, "The Challenge of Terrorism", http://www.india-seminar.com/2009/599/599_s_kalyanaraman.htm, (Accessed February 10, 2010).

been in Telangana and Naxalbari, followed by the insurgencies in the North East and wanton acts of terror in the states of Punjab and Assam. In recent times, the menace of left wing extremism, commonly referred to as Naxalism and Maoist insurgency, has been characterised as the single biggest challenge to India's internal security. Over time, there has been a steep increase in its spatial spread, the incidence of violence and indoctrination of the naxal cadres.¹²⁰

- **External security:** The continuing collusive nexus between China and Pakistan poses a strategic challenge to India. China is known to have provided direct technical assistance to Pakistan for its nuclear weapons programme.¹²¹ In the past, Chinese leaders have even claimed that their friendship is “higher than the mountains and deeper than the oceans”.¹²² Though some impression of stability prevails at the strategic level, China continues to exhibit marked political, diplomatic and military assertiveness at the tactical level.¹²³

At yet another level, China and India have failed to resolve their boundary dispute since the war in 1962.¹²⁴ Border patrol face-offs are frequent, and an armed clash or skirmish if not contained, could lead to a local conflict. In recent years, the westward expansion of Chinese railway and road infrastructure in the Tibetan Autonomous Region accentuates India's concerns with regard to their military

¹²⁰ P. V. Ramana, “A Critical Evaluation of the Union Government's Response to the Maoist Challenge”, *Strategic Analysis*, Vol. 33, No. 5, September 2009, pp. 745–759.

¹²¹ China has helped Pakistan to build a reactor to produce weapons grade plutonium at the Chashma nuclear facility. It has transferred M-9 and M-11 ballistic missiles as also facilitated in the clandestine transfer of Taepo Dong and No Dong missiles from North Korea to Pakistan.

¹²² The analysis is based on a talk delivered by Brig. Gurmeet Kanwal (retd.) to South Asia Programme in February 2010 at S. Rajaratnam School of International Studies, Nanyang Technological University, Singapore.

¹²³ Ibid.

¹²⁴ Despite 16 rounds of talks between China and India, the Line of Actual Control (LAC) is yet to be demarcated.

intentions. Indian military forces, therefore, have to be sufficiently prepared to defend against China and Pakistan in the mid-to-long term.¹²⁵

- **Maritime concerns:** The IOR is also critical to the country's security in terms of trade, energy needs, protection of island territories and exploitation of the EEZ.¹²⁶ This strategically significant oceanic region characterised by narrow navigational sea channels to its east and west can be easily interdicted or disrupted.¹²⁷ In fact, the littoral spread in India's neighbourhood is critical for the smooth flow of oil, raw materials and trade for several countries. The Indian army and the air force can be expected to play an important role in supporting the Indian navy in its objectives, missions and tasks.¹²⁸ The need to evolve comprehensive and combined security measures for protection of India's island territories and littorals will assume greater importance in the future.
- **Emerging and disruptive technologies:** The potential exploitation of emerging technologies such as nanotechnology, biotechnology, information technology and dual use innovations by adversaries with malicious intent is yet another cause for concern.¹²⁹ The adverse impact of such

¹²⁵ Gill, John H., "India and Pakistan: A Shift in the Military Calculus", in *Strategic Asia: Military Modernisation in an Era of Uncertainty*, Expanded Executive Summary, The National Bureau of Asian Research, 2005–2006.

¹²⁶ Indian Maritime Doctrine 2009, pp. 57–58. A substantial part of India's industrial and economic activity is located within the EEZ, along the 7,516-kilometre long coastline. India's EEZ is 2,013,410 square kilometres in area, which is equal to 66 per cent of the land mass, to which another 530,000 square kilometres is likely to be added as an extension to the continental shelf.

¹²⁷ The primary choke points are the Persian Gulf, St. of Hormuz, Bab-el-Mandeb, Cape of Good Hope, Mozambique Channel, Six-degree channel, Eight/Nine-degree Channels, Straits of Malacca and Singapore, Sunda Strait and Lombok Strait.

¹²⁸ Indian Maritime Doctrine 2009, pp. 89–122.

¹²⁹ http://www.rsis.edu.sg/cens/publications/conference_reports/RSIS_ICEDT%20Report_171109.pdf

disruptive capabilities, if trans-national and non-state actors have them, is becoming increasingly evident. Exploitation of asymmetric capabilities by adversaries in the form of technologies ranging from an innocuous improvised explosive device to more wide-ranging cyber attacks and electronic warfare, battlefield robotics and precision munitions, and long-range guided missiles could have serious military implications for India in the future.

The foregoing analysis reveals the expanse of security threats and challenges that the country faces. In a way, it also indicates the scope and magnitude of military readiness required by the Indian armed forces in the future. While this aspect will be discussed in the next chapter, the following sections discuss the military imperatives and implications that will drive India's readiness posture both during peacetime and war.

Military Imperatives

India's national security objectives have evolved against a backdrop of its enshrined values of democracy, peaceful co-existence, secularism and equitable socio-economic development.¹³⁰ Maintaining India's territorial integrity and resisting overt and covert acts of terror in order to ensure continued economic growth become the country's prime national security concerns.¹³¹ India's Ministry of Defence (MoD) argues that continued presence of terrorist and fundamentalist forces in its neighbourhood amongst other continental and maritime threats prompts India to maintain a high

¹³⁰ Refer to the Ministry of Defence (MoD) webpage titled, "Security Environment - An Overview" at <http://mod.nic.in/aforces/body.htm#> Ministry of Defence defines the basic responsibility of the Indian Army as one of safeguarding the territorial integrity of the nation against external aggression. In addition, the army is required to assist the civil administration during internal security disturbances, and in the maintenance of law and order, organising relief operations during natural calamities like floods, earthquakes and cyclones and maintenance of essential services if required.

¹³¹ Ibid.

level of “defence preparedness”.¹³² The prevailing security environment has therefore been contextualised at four fundamental planning levels: Firstly, the “two front” threat requires India to safeguard its borders with Pakistan and China. Secondly, since India is not a member of any military alliance it must possess appropriate conventional and nuclear deterrent capability. Thirdly, external abetment for cross border terrorism demands committal of the armed forces to internal security duties. And finally, India’s national interests in the Indian Ocean region necessitate a blue water capability.

To ensure durable peace and security against the challenges and threats described above, the country needs to maintain a “credible” and “affordable” military capability. In this context, there is need to grapple with two conflicting demands i.e., prevention of war through conventional and nuclear deterrence, and the creation of war fighting capabilities for territorial defence of the country. In any war prevention doctrine, deterrence is critical; and if, deterrence were to fail, the nation must possess the ability to prosecute war at short notice, which affords maximum political advantage at minimum cost. This demands an appropriate military capability which is sufficient to deal with the adversaries, and flexible enough to deal with new challenges and threats, and yet remain affordable and cost effective.¹³³

In this context, a few imperatives merit attention in the creation and fielding of India’s war fighting capability.

¹³² MoD further emphasises that India’s core security concerns include defending the country’s borders; protecting the lives and property of its citizens against war, terrorism, nuclear threats and militant activities; protecting the country from instability and religious and other forms of radicalism and extremism emanating from neighbouring states; securing the country against the use or the threat of use of weapons of mass destruction; development of material, equipment and technologies that have a bearing on India’s defence preparedness through indigenous research, development and production, inter-alia to overcome restrictions on the transfer of such items; promoting further co-operation and understanding with neighbouring countries and implementing mutually agreed confidence-building measures; and pursuing security and strategic dialogues with major powers and key partners. (Accessed March 6, 2010).

¹³³ In the Indian context, it is generally hypothesized that an investment of around three per cent will continue to provide affordable security in the 21st century.

- Firstly, full scale wars will have to be limited in scope and time to avoid uncontrolled nuclear escalation and associated risks of destruction.¹³⁴ While deterring war will be the primary aim, the Indian armed forces must be “prepared” and “ready” to fight short and swift wars. Military campaigns will have to be concluded in tune with the laid down political aims and objectives, and with the least number of civilian and military casualties. Conventional military operations are likely to be reduced to creating a favourable political situation, and so that post conflict negotiations could be resumed.¹³⁵
- Secondly, future conflicts would be driven by technology and innovation, and marked by high rates of attrition, degradation and casualties. Introduction of force multipliers and new weapon systems, battle sensors, communications and networks would define the nature of conflict.¹³⁶ There will be increased emphasis on real time surveillance and target acquisition, integrated command and control systems, networks and communications, cyber and electronic warfare, and lethal precision guided munitions. Proliferation of asymmetric capabilities such as guided missiles, unmanned aerial assets and battlefield robotics would drastically alter the dynamic of future wars. As such, battle ready forces would become the essence of any viable military capability.
- Thirdly, the Indian armed forces have to be prepared to fight wars over the entire conflict spectrum ranging from conventional to sub-conventional operations.¹³⁷

¹³⁴ Air Cmde Jasjit Singh in “Dynamics of Limited War”, in *Strategic Analysis*, Vol. XXIV, No 7, IDSA, pp. 1205-1220.

¹³⁵ Brig Gurmeet Kanwal, *Indian Army Vision 2020*, Harper Collins Publishers, New Delhi, 2008, pp. 62-63.

¹³⁶ Lt Gen Vijay Oberoi in “Approach Paper” in *Army 2020: Shape, Size, Structure and General doctrine for Emerging Challenges*, edited by Lt. Gen. Vijay Oberoi, KW Publishers Pvt Ltd, New Delhi, 2005, p. 15.

¹³⁷ Lt Gen V K Kapoor in “A Perspective on Force Re-structuring and Doctrinal Challenges” in *Army 2020: Shape, Size, Structure and General doctrine for Emerging Challenges*, edited by Lt. Gen. Vijay Oberoi, KW Publishers Pvt Ltd, New Delhi, 2005, p. 221.

The military emphasis will be on exploiting capabilities in an integrated and timely fashion to dominate the entire battle space. In fact, fighting across the battle spectrum, rather than engaging the enemy piecemeal in isolated air, land and maritime battles, will be the crux of future military operations.

- And finally, the prevailing nuclear environment demands that large scale offensive action aimed at defeating the enemy is scaled down. China is rapidly modernising its nuclear weapons and delivery systems to include medium to long range ballistic missiles, and emerging MIRV capabilities could carry devastating destructive effect.¹³⁸ Pakistan too with tacit support from China has been successful in acquiring a nuclear strike capability. Pakistan's rationale for its weapons is simple, and as its leaders has often emphasised, is to counter India's conventional military superiority.¹³⁹

It is quite evident from the foregoing analysis that the innumerable national security threats can no longer be seen in terms of territorial integrity and internal security alone. National security today encompasses tackling a wide range of conventional, sub-conventional and non-traditional threats which include challenges in securing the country's energy and natural resources, industrial interests and establishments overseas and the country's demographic footprint world wide. Above all, the emerging nature of warfare needs to be understood in context of technology and innovation that drives the pace and trajectory of armed conflict in a nuclear environment. The following section analyses the broad military implications of these threats and challenges that the country faces.

Military Implications

India's security challenges and threats will be determined by countries in the neighbourhood, and in particular China, trans-national

¹³⁸ China's Second Artillery Corps now re-christened as the "Strategic Rocket Wing" comprising a range of conventional and nuclear tactical weapons that can be deployed at short notice.

¹³⁹ Brig Gurmeet Kanwal, no. 123, p. 35.

terrorism and religious fundamentalism, social and ethnic upheavals, and low intensity conflicts. The challenges and threats posed are likely to be complex and could manifest themselves in several forms. The major armed threats to India shall nonetheless continue to be those from Pakistan and China. Though full-scale wars are less likely to take place, short and sharp conflicts cannot be ruled out. In the sub-continental context, such limited conflicts and confrontations could give way to trans-border acts of terrorism, ethnic strife and externally sponsored insurgencies.¹⁴⁰ Some experts have argued that as India grows economically strong, the focus of external security concerns will increasingly shift “seawards”, besides the fact that the nuclear environment would considerably diminish the political space for military action. Nevertheless, the Indian armed forces will still have to maintain a credible conventional military deterrent against potential adversaries and appropriate force structures to counter acts of terror and insurgencies.¹⁴¹ Building technological capabilities in terms of long-range precision-guided missiles and munitions, unmanned aerial vehicles, cyber and electronic warfare capacities and network centric systems would be essential to complement the overall conventional war-fighting capabilities in order to retain a decisive edge on the battlefield.¹⁴² Clearly the need to evolve or reconcile existing service specific and joint doctrines and strategies to combat the diverse challenges and threats at land, sea and air assumes greater importance.

Strategic restraint has been a feature of India’s foreign and defence policy since its independence.¹⁴³ Cultural, social, political and strategic factors have influenced India’s defence policy to generate adequate military capacity to alter its position vis-à-vis China and Pakistan.

¹⁴⁰ Lt. Gen. Vijay Oberoi, no. 124, p. 14.

¹⁴¹ Ibid.

¹⁴² Vice Admiral P. S. Das, “Contours of India’s Emerging Security Environment”, in *Army 2020: Shape, Size, Structure and General Doctrine for Emerging Challenges*, edited by Lt. Gen. Vijay Oberoi, KW Publishers Pvt. Ltd, New Delhi, 2005, p. 57.

¹⁴³ Stephen P. Cohen and Sunil Dasgupta, *Arming without Aiming: India’s Military Modernisation*, Brookings Institution Press, London, June 2010.

The strategic preference has been a policy of escapism and which till some time ago was reflected in an astounding lack of resources and modernisation. The Indian armed forces have long differed with the moderation displayed in the defence policy making, and argued for enhancing military capacities to deal with emerging threats. India's military challenge therefore lies in shaping its defence preparedness.¹⁴⁴ Despite the country's rapid economic growth and access to resources, the pace of military modernisation has been rather muted. India's military balance with its immediate adversaries continues to suffer despite the quadrupling of the Indian economy and a three fold increase in the defence expenditure over the last decade or so. Moreover, the India's growing emphasis on technology as the key to military modernisation is unlikely to contribute to the overall preparedness of the armed forces. The critical issue to understand here is that India's military readiness is not about technology alone, but the creation of an efficient and effective national security framework which can genuinely meet the challenges of the future. Consequently Cohen and Dasgupta argue that India's technocratic approach towards transforming India's military capabilities can be misleading because this may encourage the setting in institutional complacency, disinterest, leading to a lack of defence preparedness with regard to its internal security and external threats.¹⁴⁵

The emerging security environment demands efficient combat and combat support units and formations. It would entail creating, maintaining and sustaining flexible force structures to enable rapid mobilisation, quick deployment and efficient employment on the battlefield. More importantly, the operational environment will demand significant levels of inter and intra service integration in terms of organisational structures, mobilisation and military application. In other words, Indian military's readiness will imply focussing on: the strategic culture, of defence infrastructure, the strengthening of defence industrial capacity; and the formulation

¹⁴⁴ Ibid.

¹⁴⁵ Ibid.

of military doctrines and strategies suited to deal with threats of the future.

- Firstly, a country's strategic preference - pacifist or otherwise - profoundly reflects upon its ability to meet the security challenges. India's strategic behaviour towards its neighbours has largely been that of peace and accommodation. In a way, this has tempered the country's vision on the creation and fielding of military capability. Experts argue that a country with a defensive outlook often breeds a restrained orientation towards military readiness as against a state with an expeditionary military outlook. In other words, it is perhaps assumed that the Indian military can make do with lower levels of military preparedness, because the primary role and mission of its military is to only ensure territorial integrity and internal security. Sadly, and despite having a troubled relationship with two of its adversaries namely China and Pakistan, the country has failed to recognise the importance and relevance of military readiness. The security environment demands that the country's armed forces are suitably organised, equipped, trained and prepared to deliver a range of military choices and options to the political leadership in times of crisis.
- Secondly, the availability of strategic infrastructure in terms of rail, road, sea and air transportation plays an important role in warfare. Their spatial spread, capacity and reach enable the armed forces to mobilise and deploy with speed and alacrity in times of crisis. This, in turn, impacts the ability of the armed forces to logistically maintain and sustain its deployment in the remotest parts of the country, and even overseas. The lack of infrastructure especially along border districts of eastern Ladakh, Himachal Pradesh, Uttarakhand, Sikkim and Arunachal Pradesh, and some of the far flung island territories heighten our security concerns. Simply dovetailing the strategic infrastructural needs into the overall national rail, road and airport projects can help address the readiness concerns. This can only happen if the concept of strategic infrastructure is conceptualised with greater rigour

and incorporated in the country's planning structures at the highest level. The planning commission of India could play a major role in evaluating and pegging the country's strategic needs beyond their socio-economic development related focus. Currently this orientation is lacking and the country's armed forces need to learn from the United States' DoD definition and policy on strategic defence infrastructure.

- Thirdly, the defence industrial capacity of the state dictates the extent to which levels of military readiness could be achieved. The state's capacity to produce advanced weapon systems, and war fighting material such as ammunition, assemblies, special fuels, oil and lubricants etc help sharpen the readiness of the armed forces. India currently lacks the expertise to produce of high technology weapon systems and consequently relies heavily on military acquisitions ex-import. The lack of defence industrial capacity restrains the levels of operational readiness that can be achieved and maintained, besides entailing huge military expenditure. At yet another level, the national scientific effort barring a few strategic breakthroughs in the field of space and missile technology has not been too encouraging. Efforts to open the defence sector to public-private investment or strategic partnership might help address the inadequacies over a period of time. India needs to leverage its growing economic and technological prowess for developing the national defence industrial complex in order to ensure requisite levels of readiness.
- And lastly, the Indian armed forces will have to formulate their war fighting doctrines and strategies in tune with the evolving environment. The general tendency among militaries to prepare for the last war is an important lesson for policy makers and practitioners. There has to be greater understanding on the likely nature of threats, and the form of military conflicts or confrontations in the future. The armed forces will have to devise war fighting doctrines and strategies that can be executed efficiently, rapidly, and at minimum cost. These will have to be suitable for the diverse

needs of conventional and sub-conventional warfare. It is increasingly becoming important for the Indian armed forces to invest in capabilities that can counter a range of threats to including insurgency, terrorism, naxalism etc. Besides the conventional spectrum too is being influenced by the emerging war fighting technologies such as precision guided munitions, long range weapons systems, unmanned aircrafts, space based systems and cyber warfare.

Clearly India's military readiness challenge lies in contextualising the emerging security threats and fashioning the several components of hard power in a manner that they deliver in times of crisis. This would however involve a serious shift in terms of India's strategic culture, defence infrastructure, industrial capacity, and war fighting doctrines and strategies. The global power shifts and possession of nuclear weapons in the neighbourhood place additional demand on India's capacity and capability to display military readiness in the Indian sub-continent.

Summary

This chapter addressed India's military readiness concerns in the light of the prevailing geo-strategic environment, the critical security challenges and threats India faces, the military imperatives and implications that define the readiness needs of the future. It argues that India is faced with a range of conventional and sub-conventional security challenges and threats – some of which are not clearly foreseeable - and this in turn demands greater rigour from defence policy makers and practitioners. Military readiness is all about recognising these threats so that the available resources in terms of money, manpower and material can be optimally utilised to deliver the desired instruments of force. Having surveyed India's military readiness concerns, the following section focuses on the broad approach to be adopted while formulating the military readiness strategy.

6 Matching Concerns with Aspirations

Introduction

India has no formal document that comprehensively articulates the country's national security objectives, strategy and policy.¹⁴⁶ This is an issue that has been acknowledged by successive governments, the Parliamentary Standing Committee on Defence and the country's strategic community. In its recommendations, the National Security Advisory Board too emphasised the need for a coherent document on India's national security strategy.¹⁴⁷ This alone could help formulate the basis of the nation's defence policy and objectives, and the long term capability development plans. Unfortunately the absence of an overarching politico-military guidance handicaps the policy makers, planners and practitioners' efficacy on long term planning issues, and leads to lopsided policy interpretations. A strategic defence review therefore is essential, as argued by several defence analysts and experts.¹⁴⁸ While a strategic defence review might be helpful in defining the size, shape and role of the Indian armed forces, this overarching guidance could also assist in identifying the country's key readiness concerns and strategy.

This chapter surveys the gaps and deficiencies in the doctrinal and capability development of the Indian armed forces, and in turn its impact on the country's defence preparedness in the medium to long term.¹⁴⁹ The following section traces the evolution of military

¹⁴⁶ N. S. Sisodia, "What Ails Defence Planning in India?" in *Comprehensive Security for an Emerging India*, Knowledge World, New Delhi, 2010, p. 82.

¹⁴⁷ Ibid, p. 83.

¹⁴⁸ Ibid, p. 84.

¹⁴⁹ Of the several types of readiness types identified (i.e., peacetime, structural, operational and mobilisation), this section intends to focus only on deficiencies in the structural readiness of the three services. Other three could be matter of detailed study at the departmental level.

doctrines and capability development among the three services. Having broadly surveyed the planned acquisitions in the army, navy and air force, the next section highlights the structural deficiencies from readiness point of view.

Doctrinal and Capability Development

Military doctrines can be credible only if backed by commensurate land sea and air war fighting capabilities. Interestingly the Indian armed forces have witnessed considerable doctrinal change in recent times. Having been the first military service to release its operational doctrine in 1995, the Indian Air Force (IAF) set the precedence to formally document the military doctrinal thought in the country.¹⁵⁰ The Indian Army formulated its new war fighting doctrine in 2004 that seeks to “alter the basic approach to war fighting by leveraging advanced technology to fight short duration conflicts in a nuclear environment”.¹⁵¹ Later in the same year, the Indian Navy released its maritime doctrine which envisions a blue water role for its fleet.¹⁵² As India seeks to play a larger regional role, the doctrinal evolution in the Indian armed forces, and consequently the capability development assumes great significance.¹⁵³ However India’s efforts to modernise its armed forces have suffered due to several reasons and the combat edge that India had supposedly enjoyed along its western borders till the eighties has recurrently been

¹⁵⁰ Rahul Bedi, “Indian Air Force draft doctrine envisions broader role” at http://www.janes.com/news/defence/air/jdw/jdw070816_1_n.shtml

¹⁵¹ Indian Army Doctrine 2004.

¹⁵² Indian Maritime Doctrine 2009.

¹⁵³ A military doctrine provides the basic frame work and principles that shape the way in which the armed forces are employed to achieve the national objectives. For a detailed study on the subject refer to the occasional paper titled, “The Origins of Contemporary Doctrine” edited by John Gooch, *The Strategic and Combat Studies Institute*, UK, September 1997. Also see Adelphi Paper No 109 titled, “The Alliance and Europe: Part IV Military Doctrine and Technology” by Steven Canby, IISS, UK, 1974.

degraded.¹⁵⁴ Accordingly, this section attempts to evaluate the broad readiness deficiencies of the three services namely the army, navy and air force with a view evolve a better understanding of its doctrinal evolution and capability development in recent decades.

Indian Army

Some scholars have claimed that the Indian Army's conventional war fighting posture has fundamentally been defensive and attritional in nature.¹⁵⁶ They argue that the Indian Army is organised only for "defensive or pre-planned offensives to attrite the enemy's strength through tactical

Future Acquisitions: Indian Army¹⁵⁵

Land Systems: MBTs (1500), ICVs, LSVs, BPVs, MPVs (600), UAVs (200), UCAVs, 155mm SP Guns (400), 155mm Med Guns, 155mm SP tracked and wheeled Guns, ULHs (140), 155mm towed Gun howitzers (400), Mounted Gun Systems (400), 155mm PGMs (50,000), Tracked MR SAM (100), ZU-23 Gun Upgrades (468), 40mm AA Gun (115), ATGMs (5000), ICV mounted ATGMs (1000) and BPJs (59,000).

¹⁵⁴ S. Paul Kapur, *Dangerous Deterrent: Nuclear Weapons Proliferation and Conflict in South Asia*, Oxford University Press, 2008, p. 23. The calculation of combat ratios is based on four parameters: military manpower, tanks, aircrafts and defence spending aggregated for each year and thereafter averaged for the period under consideration. An interesting analysis of the conventional edge between the two countries reveals that the combat ratio roughly averaged 2.65:1 during the non-nuclear period (1972-1989), declined to 2.1:1 during the de-facto nuclear period (1990-1998) and rose slightly to 2.51:1 during the overt nuclear period (1998-2002). Interestingly, the incidence of military disputes between the two countries based on the Correlates of War (COW) project data set were five times more frequent from 1990 to 2002, at approximately 0.76 disputes per month, as compared to the period between 1972 to 1989.

¹⁵⁵ CII-Deloitte report, "Prospects for Global Defence Export Industry in Indian Defence Market", CII Indian Defence Industry Mission EUROSATORY 2010, pp. 29-31.

¹⁵⁶ Walter C. Ladwig, "The Challenge of Changing Military Doctrine", <http://india-seminar.com/2009/599.htm> (Accessed March 1, 2010).

engagements”.¹⁵⁷ Clearly these writings essentially by western scholars fail to recognise the country’s territorial concerns and boundary sensitivities in South Asia. Pakistan’s continued support to militancy and repeated acts of terror led to a full scale military mobilisation in 2001, and the realisation that, future conflicts could be “incident or trigger” driven led to the evolution of new operational thinking in 2004. The new land war fighting strategy for the western adversary largely places emphasis on proactive action and manoeuvre.¹⁵⁸ Many foreign analysts believe that the new doctrine is somewhat risky, and its adoption increases the conventional imbalance in the sub-continent. Others have argued that the new doctrine might even prompt Pakistan to increasingly rely on its nuclear arsenal for self defence. At yet another level, India has been continuously engaged in combating internal unrest and insurgencies since its independence. It has applied different approaches and evolved counterinsurgency practises to deal with a range of internal threats.¹⁵⁹ Some analysts believe that this doctrinal thought was influenced by Nehruvian thinking¹⁶⁰ and the lessons drawn from the Malayan insurgency between 1950-57.¹⁶¹ Early Indian experience in fighting the Nagas

¹⁵⁷ Ladwig, “A Cold Start for Hot Wars? The Indian Army’s New Limited War Doctrine”, in *International Security*, Vol. 32, No. 3, 2007-08, pp. 158-190 and his paper titled, “Cold Start: India’s New Strategic Doctrine and its Implications” at Naval Postgraduate School, Monterey, CA, May 2008.

¹⁵⁸ Brig Gurmeet Kanwal argues that the doctrine essentially dictates shallow territorial gains with integrated battle groups for post conflict negotiations with Pakistan. The land force operations require integration with IAF for close air support in order to speed up the tempo of operations.

¹⁵⁹ Dipankar Banerjee in “The Indian Army’s Counterinsurgency Doctrine” in *India and Counterinsurgency Lessons Learned* edited by Sumit Ganguly and David P Fidler, Routledge Taylor and Francis Group, London; 2009, pp. 189-123.

¹⁶⁰ Rajesh Rajagopalan, *Restoring Normalcy: The Evolution of the Indian Army’s Counterinsurgency Doctrine*, pp. 48-49.

¹⁶¹ The Indian Army drew several lessons from the Malayan campaign: firstly of countering insurgency under a unified command mechanism; secondly segregating the populations from the insurgents; and thirdly winning of hearts and minds of the local populace.

and the Mizos was tempered by this political concern.¹⁶² Some other experts argue that India's counterinsurgency experience is far too rich to be reduced to an easy synthesis, and that India has always managed to find the right combination of political action and military pressure to deal with internal threats and insurgencies.¹⁶³ Codified in 2006 the counterinsurgency doctrine focuses on the principles and practices best suited for sub-conventional operations including counterterrorism and low intensity conflicts.

In terms of conventional war fighting capability development, the equipment deficiencies especially in terms of state-of-the-art mechanised weapon platforms, artillery and air defence guns, and guided missile systems are glaring and indeed need to be addressed in the short to medium term.¹⁶⁴ Some measures have been taken but they still fall short to holistically address the operational readiness of the combat formations. For instance, India negotiated a deal to acquire T-90S tanks to replace its ageing tank fleet in 2001. Subsequently, India began to assemble these tanks at Avadi and has recently acquired another batch of T-90S tanks to assemble them within the country.¹⁶⁵ Many argue that the artillery modernisation

¹⁶² Rajesh Rajagopalan, "Insurgency and Counterinsurgency" in http://www.india-seminar.com/2009/599/599_rajesh_rajagopalan.htm (Accessed February 10, 2010). Rajesh Rajagopalan opines that India's counterinsurgency campaigns have been characterised by five main features: firstly, the military operations complement the larger political grand strategy; secondly, the civilian and military hierarchy emphasises the limitation on use of force; thirdly, the pattern of operations focus on securing the populace through troop intensive operations; fourthly, it does not rely heavily on small team operations and lastly, the military effort is limited to creating conditions for resumption of the political dialogue.

¹⁶³ Sumit Ganguly and David P. Fidler in "Conclusion" in *India and Counterinsurgency Lessons Learned* edited by Sumit Ganguly and David P Fidler, Routledge Taylor and Francis Group, London, 2009, pp. 225-229.

¹⁶⁴ http://www.india-seminar.com/2009/599/599_gurmeet_kanwal.htm The status reflected is summarized from the paper presented by Brig. Gurmeet Kanwal (Retd). In some cases, additional data and details from other open domain sources has been cited.

¹⁶⁵ The indigenously developed Arjun MBT has been in the pipeline for nearly two decades and till date a bulk order of only 124 tanks has been placed for manufacture.

plan has acutely suffered since the last major acquisition of 155 mm FH-77B howitzers from Bofors of Sweden in the mid 1980s. At yet another level, the counter bombardment capability in terms of introduction of high-end weapon locating radars is being addressed. However the ANTPQ-37 Fire finder weapon locating radars procured from Raytheon in 2002 are grossly inadequate in numbers given the large extent of our land borders. Separately, the serviceability of the army air defence systems acquired from Russia in the mid seventies and the eighties has suffered in recent decades. In terms of air defence equipment acquisitions, the priority has to be to replace the vintage air defence missile systems, identify a successor for air defence gun systems, and enhance the surveillance and fire control capabilities by procuring tactical control radars and successor technology to the existing fire control radars.¹⁶⁶ On the other hand, the Brahmos missile with a cruise speed of Mach 2.8 to 3.0 and precision strike at a range of 290 kilometres has been quite a success story. The modernisation of infantry weapon systems too has received some attention in the light of the army's large-scale commitment on border management and internal security tasks.¹⁶⁷ At yet another level, a network-centric battlefield information

¹⁶⁶ Besides gaps in the air defence weapons coverage, India is also handicapped in terms of radar coverage. The SAM-6 and SAM-7 missile systems which have been the backbone of the Indian army's strike formations since 1970s also need an urgent replacement. Similarly the Tungushkas, OSA-AKs and Shilka air defence systems are also ageing and are inadequate to provide high quality low level air defence cover to the field formations. The DRDO ventures of AKASH and TRISHUL have not made headway and there is a need to look for suitable alternatives from abroad.

¹⁶⁷ The army has lately initiated the F-INSAS (Future Infantry Soldier as a System) project which aims at equipping an infantryman as an "all terrain, networked, lethal, survivable soldier" for the digitised battlefield of the future. The Kornet-E anti tank guided missiles (ATGMs) with thermal imaging sights have added to the capability of the infantry battalions. Similarly the Rashtriya Rifles battalions have been equipped with surveillance and target acquisition devices and close quarter battle weapons to fight infiltrating columns and terrorists holed up in built-up areas. However there has not been much progress on fulfilling the small arms requirements for conventional warfare. The LMG version is still facing teething problems and the close quarter battle version has not found favour. The mechanised infantry is now equipped with BMP2 ICVs several variants of which are under development.

management system which synergises all surveillance sensors and shooters over a seamless communication network is most crucial. While there has been qualitative improvement in the static communications at the operational level, the development and fielding of C4I2SR and TAC3I systems and sub-systems is lacking. Similarly the integration of real time satellite resolutions with networked platforms is yet to benefit the field commanders. Searcher-I and Heron unmanned aerial vehicles have been

introduced into service since long but these are too few in number to make any significant qualitative difference in real time surveillance. The capability in the mountains has recently been upgraded by the acquisition of a few Searcher-II UAVs. It is evident from the foregoing discussion that large deficiencies in army's equipment holding, and especially their battle worthiness, could impinge upon its operational and structural readiness to deliver the desired combat potential during future military operations. Expediting these acquisitions alone can help build desired levels of military readiness. Besides the land war fighting doctrines, both in the context of Pakistan and China, need to be grounded in the politico-military realities of the time. A new conceptual balance therefore needs to be drawn between the envisaged continental threats, the desired land war fighting capabilities, and the operational doctrines and strategies to be pursued by the field formations. India's army seems

Future Acquisitions: IAF ¹⁶⁸

Aerospace Systems: MIG-29 Upgrades(63), Mirage-2000 Upgrades(51), Su-30MKI 80 (40+40), Su-30MKI (140), MMRCA (126), LCA Tejas (120), FGFA, Medium lift RW(80), Combat and Heavy Lift (22+15), DHRUVs (247), Air OP(187), Air Re-fuellers (6), AN-32 upgrades, C-130Js Hercules aircraft(6), Strategic transport aircraft, Embraer Jets (3), Hawk AJT (66), Harop Killer UAVs(10), SR & MR SAMs, up gradation of infrastructure at 30 airfields.

¹⁶⁸ CII-Deloitte report, no. 160, pp. 29-31.

to be overly focussed on Pakistan in terms of force structures and capabilities, and needs to increasingly cast operationally effective, if not comparable military doctrines and capabilities vis-à-vis China.

Indian Air Force

Even as the Indian Air Force continues to pursue an ambitious war fighting doctrine, their capability development continues to suffer for a variety of reasons. Prominent amongst these have been the fall in the number of frontline fighter squadrons, large scale obsolescence of its fleet, high acquisition cost of the replacement aircraft, and inordinate procurement delays. For instance, in the mid nineties, the collapse of the Soviet Union led to a drop in the number of air force squadrons from an all time high of 45 squadrons (in the late eighties) to 42 squadrons.¹⁶⁹ In 2009, the number of squadrons fell to 32, and some argue that delay in new aircraft acquisitions could even bring this figure down to 29.¹⁷⁰ At yet another level, the cost of a new fighter aircraft such as the MRCA has sky-rocketed to \$80 million, as against \$40 million for a Su-30MKI in 2000 or the \$8 million Jaguar in the eighties.¹⁷¹ The cost of ancillaries for the new generation aircraft would be even more phenomenal. The MRCA project mooted in 2000 has suffered from several delays and not likely to fructify soon. India's attempts at building a multi-role aircraft too have not been very encouraging. For instance, the Advanced Jet Trainer (AJT) project failed due to our inability to find a suitable engine for the aircraft. After several decades, the air force finally placed orders for the British Hawk trainer in the year 2000. The light combat aircraft project conceived in the eighties continues to be plagued by time delays, insufficient budgeting, and poor performance. It is now claimed that the aircraft is moving into the final stage of development but it remains to be seen if this aircraft can be manufactured in the future. It is therefore no surprise that

¹⁶⁹ Jasjit Singh, *Air Power and National Defence: The Strategic Force for Strategic Effect, Aerospace Power and India's Defence*, p. 147.

¹⁷⁰ Stephen P. Cohen and Sunil Dasgupta, *Arming without Aiming: India's Military Modernisation* (Brookings Institution Press; London; June 2010).

¹⁷¹ Ibid.

the air force tends to favour foreign acquisitions as against indigenised projects in pursuit of its readiness objectives. High dependence on foreign vendors too comes at a cost as these contractual obligations could affect the supply of critical spares, upgrades and their maintenance and serviceability at crucial times.

At yet another level, the air force has consistently sought to develop a war fighting role for itself to meet a wide range of external threats. The allied air campaign in Iraq and the Kargil intrusions have played a important role in the development of the doctrinal thought. The air force doctrine promulgated internally in 1997 presumably calls for a significant strategic role for air power in the future. Several air warfare experts emphasise the importance of offensive air operations, as against ground support operations, and the use of force multipliers such aerial re-fuelling, electronic warfare and C3I networks for the exploitation of the air space. This air warfare doctrine, in a way contradicts the new land war fighting strategy enunciated by the Indian Army in 2004, and perhaps this aspect needs to be mutually reconciled at the doctrinal level.¹⁷² The proposed purchase of C-17 aircraft could possibly give the Indian ground forces substantial strategic lift capability in the sub-continental context, and in pursuit of national interests in the Indian Ocean region, both to counter the traditional and non-traditional military threats. In recent times, the India's air force has also sought total responsibility to establish the aerospace superiority.¹⁷³ Aerospace defence and offence assumes salience in light of the ability of the regional powers to threaten us with superior air attack capabilities such as cruise missiles, beyond the visual range missiles and space systems.¹⁷⁴

One might however argue that the existing capabilities are not in sync with the doctrinal aspirations of the Indian air force. It further

¹⁷² There are several military experts who argue that this contradiction has since long been reconciled among the two services.

¹⁷³ Air Marshall TM Asthana, "Salience of Air Power" in *Comprehensive Security for an Emerging India*, Knowledge World, New Delhi, 2010, p. 163.

¹⁷⁴ Ibid, pp. 151-158.

reflects both in terms of the structural and operational preparedness of the air force and especially in terms of its capacity to deal with China in the short to medium term is rather limited.

It is quite evident, in the case of the air force, that there is a mismatch between the organisational aspirations and the ability to deliver the combat potential. This is likely to continue to till such time the worthiness of the squadrons both in terms of quantity and quality are addressed in the medium to long term. While the Indian air force might be able to deploy substantial assets against Pakistan, its ability to face the Chinese strides in military aviation could be doubtful. The air force might have to recast both its doctrines and capability needs in the larger regional context in the future.

Indian Navy

Indian Navy's twenty year naval modernisation plan formalised earlier called for the development of a blue water navy. In the following decades, the navy has relentlessly pursued platform acquisitions in the form of destroyers, frigates, submarines and maritime

Future Acquisitions: Indian Navy ¹⁷⁵

Naval Systems: Indigenous aircraft carriers (2), ASW Corvettes (8), Off shore patrol vessels (4), Sail training ship (1), survey vessels (6), destroyers (4), frigates (7), upgrades for Kirch class corvettes (5), LPDs (2), Upgrades for Brahmaputra class frigates (3), diesel submarines (6), ATVs (3-5), fighters for IAC, MiG-29K (29), alternatives for six naval Tejas aircraft, LRMP Being P8-I (20), LRMP Il-38(5), MR maritime recece aircraft (6), SR maritime aircraft (11), ALHs (47), maritime heptrs (16), and AJTs (17).

reconnaissance capabilities. Consequently India's lone aircraft carrier is being kept operational awaiting the arrival of mega billion dollar Vikramaditya from Russia. The revised price was finalised in December 2009 as \$2.3 billion, and the ship is likely to be delivered

¹⁷⁵ CII-Deloitte report titled, 'Prospects for Global Defence Export Industry in Indian Defence Market', CII Indian Defence Industry Mission EUROSATORY 2010.

in 2012. Another indigenously developed aircraft carrier, christened Vikrant and being built at Kochi since 2005, is likely to be launched in 2011, and commissioned in 2015. The construction of yet another aircraft carrier which is planned after the launch of the Vikrant has also been reported. This implies that the Indian navy shall have two aircraft carriers by 2015, and a third probably by 2020.¹⁷⁶ In addition, the navy has a total of 23 destroyers and frigates as the major surface combatants which include five Rajput-class destroyers procured from the USSR during the 1980s, and three Talwar-class frigates from Russia more recently. Another class of destroyers, the modified Delhi-class, is under construction in India, and three ships of the Talwar-class are being built in Russia which are likely to be commissioned between 2011 and 2012.

Considering the capacity of Indian shipyards and the number of ships likely to be decommissioned in the foreseeable future, the total number of major surface combatants in the destroyer and frigate class by 2020 should be about 29, a mere six more than the current holdings. As regards medium range ships, these comprise 24 corvettes, 21 offshore patrol vessels (OPVs), including those of the coast guard, and about 10 amphibious ships (LSTs). One amphibious transport dock (LPD) christened Jalashwa was bought from the U.S. Navy in 2007. The Jalashwa is capable of transporting 1000 troops and heavy loads, and thus significantly adding to India's force projection capabilities. This totals to about 69 major and medium sized sea going naval vessels. In addition, the navy has an equal number of smaller crafts for seaward defence, coastal security and minesweeping duties.

Clearly the naval capabilities, and unlike the other two services, have seen significant enhancement in its operational capabilities in the last decade or so. Firstly, there is an attempt at the standardization of naval weapon systems and sensors on the different surface platforms under construction. Secondly, the Brahmos missile has been a big success and these weapon systems are now likely to be

¹⁷⁶ Iskander Rehman, *India's Future Aircraft Carrier Force and the Need for Strategic Flexibility*, IDSA Commentary, June, 1, 2010.

the standard fits on Indian naval platforms. Thirdly, the indigenous nuclear powered submarine (SSN) Arihant launched in 2009 is likely to be commissioned in 2011. While a total of three SSNs are expected to be built in the long term; however in the interim an Akula-II class SSN is also scheduled to join on lease from Russia in 2010. The Indian Navy should therefore have two SSNs by 2014. The conventional submarines currently range from the Foxtrot-class of 1970s, to the Shishumar-class inducted in the 1980s, and the Kilo-class submarines inducted between 1986 and 2000. Replacement plans include six Scorpene-class submarines, two of which are to be delivered by France, and the remaining built in India by 2017. By 2020, the navy will be left with 14 conventional submarines, unless it decides to delay the phasing out of existing submarines. Fourthly, while the Viraat flies the Sea Harriers, both the new carriers will operate the Mig-29K Fulcrum class of aircrafts. Similarly the long-range surveillance and anti submarine warfare role is currently being carried out by the eight TU-142M and five IL-38 aircrafts, all procured from Russia during the seventies and eighties. With the induction of eight Boeing P-8I Poseidon long-range maritime patrol (LRMP) aircrafts commencing in 2013, this role will get a boost because of their better capabilities. And lastly, in a bid to close the coastal security gaps, it is reported that a Sagar Prahari Bal (SPB) is being raised with a fleet of 80 fast boats.

In the doctrinal context, the navy promulgated its doctrine in 2004. Thereafter the doctrine was revised in 2009. The document envisages a four fold role for the service: military, diplomatic, constabulary and humanitarian. In its operational role, the navy postulates a force architecture comprising of two aircraft carriers supplemented by other surface, sub-surface and air components which would be capable of exercising sea control in the Indian Ocean region. The navy has even outlined a maritime strategy which takes on the role for providing security to the country's economic and energy interests in the region. Some experts might argue that this mix of classical naval war fighting and economy related maritime security role is the need of the time, and the navy must pursue this growth trajectory. Importantly, the Indian navy's role has been enlarged due to offshore oil and gas exploration interests, extended EEZ territorial limits, protection of littorals, and the trans-national and coastal security

threats. Increased interaction with foreign navies has contributed to the growth of India's naval capacity and maritime confidence.

The Indian navy is clearly embarked upon a path towards a more prominent role in the Indian Ocean region, but it remains to be seen how its doctrinal ambitions will be met in the future. This is complicated by the medium to long term naval challenge from China, which is now being fully analysed and understood.

Structural Concerns in India's Readiness

The foregoing analysis draws out the major gaps and deficiencies in India's military readiness with regard to the doctrinal evolution and capability development in three services. These gaps and deficiencies are examined against the several military challenges and threats visualised in the preceding chapters. In the continental context, there is a need to evolve greater clarity on a two front doctrine, and build adequate land and air force based combat capability in the mountains. In the maritime sphere, there will be a need to expedite the several naval acquisitions in the pipeline required to deploy a two carrier based navy in the Indian ocean region, reconcile aspects of aerial maritime reconnaissance with the air force, evolve a joint doctrine on amphibious operations among the three services, and collaborate with other states agencies and para-military forces on coastal security tasks. In the aerospace dimension, it will be pertinent to re-balance the air warfare doctrine to cater for both war fronts, expedite the planned aircraft acquisitions, build sufficient capability in support of our island territories, and most importantly cater for rotary wing medium and heavy lift in mountains. In the sub-conventional context, there will be a need to sustain and refine the counterinsurgency doctrines and capabilities with the land force, evolve possible support roles for the air force and develop requisite coastal patrolling capabilities for maritime security. In the asymmetric warfare domain, there will be a need to evolve a joint military doctrine to counter or undertake asymmetric operations and identify the bare minimum capabilities for development. And if India were to by any measure emerge as a major security provider in the foreseeable future, then it will need to cast appropriate force projection doctrines, build rapid reaction forces, and enhance the capacity of the affected services to undertake large scale strategic air or sea lift.

Having broadly analysed the structural concerns among the three services, the discrepancies in India's military readiness can be explained at three levels. First, there seems to be a fundamental disconnect between the doctrinal aspirations of each service, and the country's ability to deliver the military capability needed to operationalise their service doctrines. This aspect particularly stands out in the case of the army and the air force, while the navy has been somewhat more fortunate. Second, the envisaged military doctrines must easily mesh with the overall politico-military and strategic culture. Overreaching doctrinal aspirations might place an undesirable demand on the country's scarce resources to produce the military capabilities. This does not imply that the current doctrinal articulations are incongruous, but that these need to be harmonised with the long term national interests. And third, the inability of the national security structures to iron out the inconsistencies in fielding a "ready and relevant" military force in the future. A vision needs to be clearly articulated for the new Indian military, which harmonises its doctrinal evolution and capability development in tune with the larger national interests and aspirations.

Summary

This chapter surveyed the gaps in the doctrinal and capability development of the Indian armed forces, and in turn its impact on the country's defence preparedness. These gaps have been examined separately for the army, air force and navy. It is observed that there exists a mismatch in the doctrinal aspirations of each service, and the capability needs that the country can deliver in the medium to long term. The discrepancies have been tabulated to evolve a clear picture on the military's readiness needs and deliverables in the foreseeable future. The next chapter identifies the organisational hurdles and limitations towards the creation and fielding of the required operational and structural military readiness levels.

7

Identifying the Limitations and Hurdles

Introduction

Militaries in recent decades have seen a quantum change in the way they equip, train, plan and organise for war. The prime drivers for change have been the emerging nature of conflict, and the development and the fielding of cutting edge technologies for war fighting. It is a well known fact that introduction of new ideas and technologies usher in their own dynamics and constraints, thus necessitating complementary changes in military structures, policies, procedures and practices. On other hand, militaries are also known to promote standardisation and rigidity in thought and action, and rightly to hedge against uncertainties of war and deleterious consequences of uncoordinated military action. Incidentally, the very nature of change militates against the manner in which armies are organised or structured for war. Shedding of old ideas and practices is often inhibited by those very organisational elements within the military that are presumed to be the prime drivers for change. The issue gets even more complex when the change is defined in context of existing ways for waging war and not for the foreseeable future.

Some concerns that impede the country's military preparedness (i.e., both structural and operational) to face various internal and external threats are discussed in the following sections. This chapter discusses the organisational hurdles and inhibitions at three broad levels: the major lacunae in national security policy and planning related issues; the hurdles in resourcing and capability development; and the limits and effect of institutional culture.

Policy Issues

Three important policy related aspects are discussed: the relevance and importance of drafting the national security strategy; the necessity of higher defence structures and planning; and the significance of nesting the military doctrines and strategies in the overall geo-political and regional security context.

National Security Strategy: India's defence policy has rarely demonstrated radical departures apart from the dramatic shift that occurred in the aftermath of the 1962 Sino-Indian war. Evers since most changes have been slow, limited and incremental, and often not even been subject to changes in government and adverse politico-military developments in the neighbourhood. In fact, these developments have not even produced a dramatic shift in the threat perceptions, budgetary allocations and military options and responses. The higher defence policy making apparatus has yet to develop requisite organisational skills and mechanisms, planning capacities and necessary practices to deal with crises situations and contingencies. Sumit Ganguly argues that fashioning such a strategic outlook requires political sagacity and far better coordination between the bureaucratic and institutional entities, the military services, and the strategic community.¹⁷⁷ The absence of such a skilled body of civilian and military personnel has ill served the Indian defence policy making and therefore rendered many decisions to the structural and systemic constraints that prevail within the country. Only if India hopes to forge this strategic vision within its defence policy making, that it can seek to address the military readiness concerns of the twenty first century.

Higher Defence Planning: Some experts like Stephen P. Cohen and Sunil Dasgupta argue that the Indian armed forces are basically on their own when it comes to planning military strategies and fight wars (this impression seems to be misplaced and some what exaggerated among the Western scholars).¹⁷⁸ Consequently the armed forces display strong institutional biases in terms of defence acquisitions, evolution of doctrinal thought and utility of force. This assumes even greater significance in absence of an over-arching national security strategy. Their professional outlook and the recent profusion of service specific doctrines, in a way hinder the

¹⁷⁷ Sumit Ganguly, "Indian Defence Policy" in *The Oxford Companion to Politics In India*, Oxford University Press, London, 2010, p. 550.

¹⁷⁸ Stephen P. Cohen and Sunil Dasgupta, *Arming without Aiming: India's Military Modernisation* (Brookings Institution Press; London; June 2010).

articulation and management of joint operations. Furthermore, the internal security situations, which usually demand service specific attention, add up to the organisational dilemma in a conventional operating environment. This however seems to be changing gradually. Pursuant to the recommendations made by the Group of Ministers (GoM) Committee constituted in February 2001 on reform of the Indian national security system, several important actions have been taken with regard to higher defence planning structures and planning processes.¹⁷⁹ Primarily these include the institution of the Defence Acquisition Council (DAC) to streamline the defence procurement process.¹⁸⁰ Another significant development has been the establishment of HQ Integrated Defence Staff (IDS) to enable joint staff planning among the three services.¹⁸¹ Ever since, HQ IDS has also been involved in evolving the long term integrated perspective plan (LTIPP) for the Indian armed forces. LTIPP looks at the tri-service capability development over a fifteen year perspective. However some of these initiatives still continue to be hampered by institutional mindsets.¹⁸² Prominent among these have been the country's inability to designate the single point military advise to the government. Integration of the three service headquarters through the office of the Chief of Defence Staff (CDS) to the Ministry of Defence (MoD), and further on to the highest defence policy formulation and decision taking body is important. Another important lacuna has been to follow up on the appointment of senior armed forces officers in the MoD to achieve any worthwhile integration and jointness at the ministry level, as is commonly found in other mature democracies of the world.

Doctrines and Strategy: India's ability to fight on two fronts and in the maritime dimension as well has long been debated. The land

¹⁷⁹ <http://164.100.47.134/lsscommittee/Defence/14s22ndreport.pdf> & /32nd%20Report-ATR%20Kargil.pdf

¹⁸⁰ <http://164.100.47.134/lsscommittee/Defence/6threp.pdf>

¹⁸¹ <http://164.100.47.134/lsscommittee/Defence/36th%20Report-UNIFIED%20COMMAND.pdf>

¹⁸² Ibid.

war fighting capability too stands eroded by its commitment in counterinsurgency operations. In this context, and therefore, the oft repeated argument of reduction in military force levels is rather misplaced. It can take place only if a rapprochement with China gathers momentum and the Kashmir issue is resolved. Since neither scenario seems to be likely in the foreseeable future, the operational necessity to maintain appropriate levels of land, sea and air force “readiness” for both fronts cannot be wished away. While the western front with Pakistan can be taken care of, the northern frontier with China still lacks sufficient strategic infrastructure and an appropriate force posture to take care of the national security interests.¹⁸³ In that context, the raising of the new mountain formations and aircraft carrier based fleets do make sense, as these could considerably enhance India’s conventional military deterrent capabilities in the Himalayas and the IOR respectively.¹⁸⁴ In an era when future military threats are becoming increasingly difficult to predict, it is also important to recast distinct components of the three services for “capability” cum “threat” based roles. These network centric, and air mobile or sea borne tri-service forces could deploy rapidly at home or abroad to counter a range of traditional and non-traditional threats. Maintaining and sustaining a fair mix of “threat` and `capability” based forces shall continue to be the primary military readiness challenge in the foreseeable future.¹⁸⁵ At the policy level, there is a need to articulate the national security strategy which can then form the basis of drawing up the national military strategy, the integration of military doctrines and strategies with the political objectives, and the long term force development plans.

Capability Development

The capability development is again discussed at three levels. First, the aspect of long term defence budgeting, and its optimal utilisation.

¹⁸³ This is a common understanding prevalent among the strategic analysts.

¹⁸⁴ IISS Strategic Comments, *India Arms for the Future: Wider Strategic Horizons Broaden Defence Procurements*, Volume 15, issue 1, February 2009.

¹⁸⁵ This is again commonly argued in the strategic circles.

Second, the lack of capacity to research and indigenously develop advanced military platforms. And lastly, the chronic defence acquisition delays.

Defence Budgeting: In the late forties and the fifties, India spent an average of 1.6 per cent on the country's defence services, when the expenditure spurted to 3.8 per cent as a consequence of the 1962 Indo-China War. In late 1980s, the budgetary allocation saw some increase, but lately, the outlay has fallen to around two per cent, despite repeated assurances to maintain it at three per cent. As per the Thirteenth Finance Committee report, the defence allocation pegged at 2.12 per cent of the GDP in FY 2010-11 is likely to erode to 1.76 per cent in FY 2014-15. This might be some cause of concern for the defence policy makers and practitioners. At yet another level, the worry is that the country's defence budgeting continues to be a financial exercise.¹⁸⁶ While the long term integrated perspective plans are supposed to be the basis of the Defence Five-Year plans, and the annual defence budgeting process, the long term perspective plans have never been approved by the government. And since the Defence Five-Year Plans often do not get sanctioned, the link between force planning and defence budgeting does not get established. Even the annual defence budget allocation also does not flow out from approved programmes, where the past trend of defence expenditure is the main basis of future budgeting. A firm budgetary commitment with the ability to roll forward unexpended allocation alone can ensure continued development of the land, sea and air capabilities in the future. If we were to ensure economy and efficiency in defence expenditure, and in turn also ensure the "operational" and "structural" readiness of the Indian armed forces, then establishing the link between the country's defence budgeting and planning process is a must.¹⁸⁷

¹⁸⁶ Amiya Kumar Ghosh, *Defence Budgeting and Planning in India: The Way Forward*, Knowledge World, New Delhi, 2006, p. vii.

¹⁸⁷ Ibid.

Defence Technology: India has eight Defence Public Sector Undertakings (DPSUs) under the control of Department of Defence Production, Ministry of Defence (MoD).¹⁸⁸ These undertakings together with 40 Defence Ordnance Factories (OFs) form the backbone of India's defence production.¹⁸⁹ Unlike the OFs which produce low end military items, the DPSUs cater to the strategic needs of the Indian armed forces.¹⁹⁰

The OFs in particular are responsible for manufacture of arms, ammunition, armoured vehicles, and ordnance stores.¹⁹¹ The organisation has performed inadequately and key areas of concern remain with regard to the internal management of these factories, the range and depth of production, the pricing of items, and their quality and the inordinate delay in delivery schedules. Various governmental reviews have recommended measures to energise the management of these factories, but so far not much has been done.¹⁹² There is a need to clearly outline an approach to improve the efficiency of these factories, and which alone can ensure that the "structural" and "operational" readiness needs of the country's armed forces are met.¹⁹³ Surely India needs to encourage and build its military research, design and production capacities to meet the

¹⁸⁸ <http://164.100.47.134/lsscommittee/Defence/9threportof14th.pdf> and /
[archive_reports.aspx?lsnum=14](http://164.100.47.134/lsscommittee/Defence/9threportof14th.pdf)

¹⁸⁹ <http://164.100.47.134/lsscommittee/Defence/7threp.pdf>

¹⁹⁰ The items produced by DPSUs ranges from aircrafts to helicopters, warships, submarines, heavy vehicles and earth movers, missiles, electronic devices and components, alloys and special purpose steel. In terms of value of production, DPSUs account for more than 65 per cent of the total industrial output of all defence public sector enterprises, including Ordnance Factories. Over the years, the undertakings have grown both in size and as well as in their portfolio of items. However, the growth of DPSUs in terms of range and depth of production has not corroborated with the requirements of the armed forces. This is evident from huge arms import by India.

¹⁹¹ <http://164.100.47.134/lsscommittee/Defence/14s20threport.pdf>

¹⁹² The Reports of the Committees are yet to be made public. The views expressed here are based on an interaction with Laxman Behera, Associate Fellow at Institute of Defence Studies and Analysis, New Delhi.

¹⁹³ <http://164.100.47.134/lsscommittee/Defence/33rd%20Report-ID-PPP.pdf>

long term technological demands, but not at the cost of country's defence preparedness in the short, medium and long term. At yet another level, this also calls for a commensurate up gradation and refinement in the defence acquisition procedures. The defence acquisition process is slow and suffers from several institutional and procedural deficiencies. In terms of the acquisition reforms, there is an urgent need to graduate beyond the first generation reforms currently centred around "procedure-isation" of the acquisition processes, and move towards the timely "delivery" of military capability. It is time to learn from western experience with regard to capability development such as those outlined in the recent Bernard Gray report¹⁹⁴ in United Kingdom, and recommendations of the US House Armed Services Committee (HASC)¹⁹⁵ on military readiness issues in order to build "effectiveness" and "accountability" in the country's acquisition process.

Defence Acquisitions: Military modernisation must address the short and long term war fighting capability imbalances amongst the three services through an integrated framework of strategic planning and coordination. Interestingly, and despite increased budgetary allocations, the country's military modernisation drive continues to suffer from the lack of a national security strategy; sound higher defence structures and decision making process; and organisational reform in the Indian armed forces. The modernisation process is further fettered by the drive for uneven technological indigenisation, the lack of civilian expertise in matters of defence and strategy, and skewed organisational priorities. All this makes the Indian nation militarily unprepared to meet some threats, and in turn, dampens the ability of the armed forces to better match these threats with appropriate military capabilities. In other words, the Indian defence acquisition system can be easily surprised due to its weak institutional

¹⁹⁴ <http://www.mod.uk/DefenceInternet/AboutDefence/CorporatePublications/PolicyStrategyandPlanning/ReviewOfAcquisition.htm>

¹⁹⁵ See relevant section on US military readiness at http://armedservices.house.gov/oversight_plan.shtml

guidance and structures, diffused procedures and practices, inter-service rivalry and lack of civilian expertise on defence matters.

Clearly the aspect of capability development which is largely a function of budgeting, technology and acquisitions demands a substantial change in the role and functioning of the defence finance, the scientific community, the production agencies and the acquisition bureaucracies. While some organisational momentum can be seen in this direction, there is more that needs to be done on the acceptability and accountability of the DRDO. The defence acquisition plans too need to be clearly articulated and directed to enable participation in research and production from a wide range of public, private and multi-national defence enterprises and entities.

Institutional Culture

Three aspects assume importance in this context namely, disconnect in the country's civil-military dynamic, inability to affect structural reforms or organisational change, and lack of professional military education opportunities. These three combine to produce an effect that is not conducive towards enhancing the operational efficacy of the Indian armed forces. Above all, it impinges upon their operational readiness and ability to fashion appropriate military responses during operational contingencies.

Civil Military Relations: Civil-military relations lie at the core of national security decision making process. And in that sense, the Indian defence establishment needs to urgently grow out of the current stasis. Clearly there is an express need to strengthen the civil military dynamic within the country, to ensure that the several instruments of force are capable of responding to emerging challenges and threats. Cross pollination of national security structures with defence expertise could pave the way for institutional equity, and which in turn, could contribute towards the overall growth of strategic culture and operational thinking in India. In the short term to medium term, this will entail the vertical and horizontal integration of the Ministry of Defence (MoD) and the service headquarters, the representation of military staff in national security structures, the leveraging of elements of military diplomacy, ensuring consistency in defence resourcing and budgetary utilisation, systemic

reforms in the acquisition process and the defence industrial base, and the military preparedness for a range of challenges. In other words, a shift in the “vocabulary and imagery” of the civil-military relationship is a must, and that the need to sow agents of change in this relationship and the decision making process is important to draw the right focus on the operational readiness needs of the Indian armed forces.

Structural Reforms: The Kargil Review Committee (KRC) and Group of Ministers (GoM) report had stressed the need for defence reforms. Amongst other several recommendations made by the committee, they have suggested the appointment of senior armed forces personnel of requisite operational experience in the MoD, to make use of their expertise in the national security structures and planning processes. This will enable effective decision making at the highest level, and also promote much needed integration amongst the three services. Considering the fact that the key to success lies in integration of the three services over time, the creation of Chief of Defence Staff (CDS) will be necessary to provide single-point military advice to the government. There is also a need to identify the common operational and logistical footprint amongst the three services, with a view to evolve cost effective joint practices. At another level, the Indian armed forces also needs to re-evaluate its teeth to tail ratio, and consequently progress towards maintaining a lean and mean war fighting machine. The rightsizing of existing force structures alone can enable them, to recast some of its combat and support components, and to forge additional capabilities it wishes to create for the 21st century. It is important to bring in structural change through small but incremental steps based on “build a little, test a little, build a little” concept. New ideas and technologies carry serious transformational implications because of the need to integrate disparate force structures, their doctrines and capabilities. Besides saving time, this approach promises better absorption of war fighting doctrines and technologies, and can act as an accelerator for large scale transformations in the armed forces.

Education: The Indian armed forces are engaged in modernising its forces with increased emphasis on mobility, lethality and battle space awareness. This calls for a transition from manpower intensive

to a technologically capable force in terms of network centricity, manoeuvrability, lethality and survivability under diverse battle conditions. Greater reliance on technology and innovation would imply a corresponding shift in organisational culture, training and education. This will be crucial towards developing skills and capacities which are capable of meeting the future challenges. Foreign military exchanges and deployment for peacekeeping operations have indeed contributed towards new organisational thinking and internal reform. At yet another level, there is a need for greater professional learning through formal academic education.¹⁹⁶ Between “military training” and “military education” there is a thin line to distinguish. While “military training” focuses on the ability of military organisations and individuals to perform specific operational or tactical tasks and functions efficiently and effectively, focus on “military education” particularly enhances the length and breadth of professional military knowledge, their reasoning abilities and interpretation on diverse strategic perspectives, innovative thinking and complex problem solving. Exposure to strategic and security studies at established universities and think tanks, both at home and abroad, could provide the much needed impetus in the military’s doctrinal thought, the necessity for technological infusion and professional orientation.

The Indian armed forces have made significant strides in terms of doctrinal thought and capability development in the last decade or so. It would suffice here to say that future military challenges and threats would demand more timely and precise application of force. In that context, it would be imperative to resolve the hurdles and impediments discussed above to facilitate adequate and appropriate levels of structural and operational readiness among the armed forces. A healthy civil-military relationship alone could contribute to the achievement of the desired military readiness levels – structural and/or operational. It would therefore be necessary to evolve the right readiness concepts, metrics and mechanisms in context of the

¹⁹⁶ Harinder Singh, “Professional Military Education: The First Steps in the Indian Context”, IDSA Issue Brief, November, 30, 2010.

Indian armed forces. A study of military readiness practices followed worldwide therefore becomes imperative.

Summary

This chapter discussed the organisational road blocks at three broad levels: the major lacunae in national security policy and planning structures; the hurdles in capability development; and the limitations of the institutional culture. Three important policy related aspects were discussed including the importance of the national security strategy; the higher defence structures; and the merging of military doctrines and strategies with the overall regional security context. The aspect of capability development too demands a substantial change in the role and functioning of the defence finance, the scientific community, the production agencies and the bureaucracy. The technology acquisition plans need to be articulated and directed to enable participation of a wide range of public, private and multi-national enterprises. In terms of institutional culture, the disconnect in the civil-military dynamic, the inability to undertake comprehensive organisational reforms, and lack of professional military education assume importance. It is argued that these lacunae combine to produce an environment that is not conducive for enhancing the operational preparedness and efficacy of the Indian armed forces. In the following section, the policy options and prescriptions to address the readiness problems are discussed.



Part-III

India's Military Readiness Strategy



8 Forging India's Hard Power in the New Century

Introduction

Geography, technology and economy chiefly determine a state's preference in terms of military readiness to serve its national interests.¹⁹⁷ States tend to pursue multiple national security aims and objectives - some more imagined than real. For a country like India, which seeks to carve out an independent strategic path, the rise to regional power status will require ready and relevant instruments of military force. Of course, the nation's ability to create and field a viable military force will have to be integrated with other measures of state power such as economic prowess, social cohesion, and political stability. How India fashions its military readiness in the twenty first century will depend on its ability to address several complementing and contradictory factors.¹⁹⁸ This chapter examines the problem of fashioning "ready and relevant" hard power at four principal levels: first, the key strategic opportunities that will drive India's military preparedness in the future; second, the critical security threats that the country faces in the foreseeable future; third, the hurdles that limit the nation's capacity to deliver capability; and the plausible measures to build military readiness in the medium to long term.¹⁹⁹

Strategic Opportunities

The key strategic drivers that could contribute to India's rise, and consequentially a military power of some consequence, are essentially

¹⁹⁷ Barry R. Posen, *The Sources of Military Doctrines* (Ithaca and London: Cornell University Press, 1984).

¹⁹⁸ Ashley J. Tellis, *Future Fire: Challenges Facing Indian Defense Policy in the New Century*, Transcript of a speech made at the India Today Conclave, New Delhi, March 13, 2004.

¹⁹⁹ Harinder Singh, "Forging India's Hard Power in the New Century", IDSA Issue Brief, December 25, 2010.

three fold. These are India's high rate of economic growth; a vibrant and skilled populace that seeks to build a strategic national vision; and the evolving military partnerships between India and other countries. While there are several other factors such as politics and culture that contribute to a nation's growth, these are the ones that mainly contribute to the creation and fielding of a ready and relevant military power.

Economic Growth: A military equipped with modern defence systems which are sophisticated and effective is normally priced in huge numbers. For a country like India, which has to deal not only with questions of territorial defence and internal security but also of unhindered all round development, high economic growth becomes an imperative. A vibrant economy alone can buy increased levels of capability and readiness. More importantly, it can buy the technological sophistication and combat edge required to deliver quick and decisive military outcomes. Good tools of the trade and trained manpower that can use these tools cost big money. It will not be possible to acquire such capabilities without consistent levels of economic growth, and fortunately, it is changing for the good. Economic growth and access to high technology seem to be changing the military perspectives within the country. India's capital expenditure on procurement of military hardware is expected to grow from USD 13.1 billion in 2010-2011 to USD 19.2 billion by 2014-15 (this is even when the budgetary allocation would have fallen to 1.76 per cent by 2014-15 as per the Thirteenth Finance Committee report).²⁰⁰ A modest three per cent allocation of the growing GDP should be adequate for the necessary modernisation. However, adequate budgetary allocation alone might not be enough since its optimal utilisation will be essential to acquire the desired capability.

National Vision: India's ability to fashion ready and relevant military force structure will much depend on its strategic vision and the

²⁰⁰ CII-Deloitte report titled, 'Prospects for Global Defence Export Industry in Indian Defence Market', CII Indian Defence Industry Mission EUROSATORY 2010.

quality of decision making. The national interests that India seeks to service will form the basis of the country's defence planning and force structuring in the future. Whether India can develop the state institutions that allow it to articulate its political goals and objectives clearly and, in turn, allow it to mobilise resources for economic growth and military modernisation effectively, would be important. This vision alone can allow the Indian state and its military to transform the available resources effectively into the instruments of force required to make it a regional power of some consequence. Currently there exists an acute readiness deficit that inhibits the state to maintain the balance between capable and credible military force. Greater clarity on the country's grand strategy and in turn, the national security and military strategy could secure India's unhindered military readiness to meet contingencies in the future.

Strategic Partnerships: Another important factor will be whether India is capable of leveraging the country's relationship with several lead powers of the world to its advantage. The challenge will be to develop viable military partnership with countries that serve both mutual and India's own interests. The United States, Russia, Japan and the European countries will form important components of these partnerships. Other countries such as Australia, Indonesia and Vietnam too will form important partnerships for the future. India will have to figure out as to which of these relationships could be best leveraged to enhance its hard power. All of these countries might need to be part of India's strategic cum military relationship, and it need not come at cost of the other. By doing so, India will have the flexibility to manoeuvre within the international system to acquire much needed military technologies to its advantage. It will therefore be in India's primary interest to develop a productive and collaborative defence industrial relationship with countries that could deliver its military capability needs and readiness levels in the future.

Key Threats: Immediate and Foreseeable Future

India occupies a predominant geo-strategic position in South Asia. The country shares land borders with six countries. The external threats essentially emanate from China and Pakistan. The internal threats involve cross-border terrorism, non-state and trans-national actors, illegal migration, drug trafficking and organised crime.

Therefore the critical security challenges that drive India's military doctrines and capabilities involve border management, internal and external security, and maritime security.

Border management: The long and porous land borders present a significant security challenge to the Indian state. The employment of multiple agencies including the Indian army, the Border Security Force (BSF), the Indo-Tibetan Border Police (ITBP) and the Assam Rifles (AR) along India's extensive and arduous land frontiers compound both the internal and external security problem. Inept management of the borders over time has created volatile internal security situations. Insulating the land frontiers from infiltration, incursions, intrusions and demographic inversion translates into a major security challenge. India has to address the challenge of internal security without undermining its capacity for external defence. Historically, India has dealt with internal unrest and insurgencies by employing manpower intensive techniques instead of technology. Consequently its approach to preserving internal security has not been as effective, because the technology to supplement counter insurgent operations is lacking. Consequently, the internal security remains a significant security issue. In recent times, the menace of left wing extremism has been characterised as the single biggest challenge to India's internal security. At yet another level, though the scourge of Pakistan sponsored militancy in Kashmir has substantially reduced but growing instances of public unrest and disaffection is a cause of concern. Maintaining large counter insurgency forces cuts India's ability to acquire conventional war fighting capabilities. Here India might have to make painful choices between the conventional and sub-conventional force levels because of the gravity of its internal security commitments in the future.

External Security: An important aspect is the need to protect the country from external threats in a nuclear environment. This raises the question whether India has the capacity to prosecute a swift and short war. The presence of nuclear weapons in the subcontinent however presents an important security dilemma. While an all out war is not likely to occur given its costs and dangers, the obsolescence of a limited war is also not assured. So how does India manage and prosecute a limited war is a challenge that it faces. A limited war

implies punishing the adversary (in this case Pakistan), but also not so hard so as to cause an inadvertent escalation of conflict. It demands an approach that puts premium on achieving a speedy outcome before the conflict runs into an unavoidable nuclear escalation. Getting the Indian military to prosecute a fast paced war will require an optimal military doctrine, strategy and technology. Acquiring these will require doctrinal clarity and capabilities that are flexible, precise, speedy and lethal. Another aspect affecting external security pertains to whether India can acquire an effective nuclear deterrent in the context of China and Pakistan. India's scientific and innovative capacity, nuclear doctrinal stance and strict civilian control over the arsenal provides the foundation to develop an effective deterrent without moving towards an arms race. But to ensure this strategic outcome, the temptation to pursue new operational uses for its nuclear weaponry will have to be resisted. It will also be imperative is to have a clear understanding of the Chinese and Pakistani nuclear doctrines in order to fashion a credible, secure and survivable second strike nuclear capability. At yet another level, the military potential of technologies such as nanotechnology, biotechnology, and information technology by adversaries could have serious implications for India in the future.

Maritime Security: The Indian Ocean Region (IOR) is critical to the country in terms of sea based trade and commerce, energy needs, protection of island territories, and exploitation of the exclusive economic zone (EEZ). A substantial part of India's economic activity is located within the EEZ and along the 7,516 km long coastline. The EEZ is approximately 2,013,410 square kilometres which is equal to 66 per cent of India's land mass, and to which another 530,000 square kilometres is likely to be added as an extension to the continental shelf. More importantly, this strategically significant oceanic region characterised by narrow navigational channels to its east and west can be easily interdicted or disrupted. The littoral spread in the IOR is critical for the smooth flow of oil, raw materials and trade for several countries. The need to evolve comprehensive and combined security measures for protection of India's exclusive zone, island territories, deep sea mining zones and littorals will assume greater importance in the future. In this regard, the Indian army and air force can be expected to play an important role in

supporting the Indian navy in achievement of its maritime objectives, missions and tasks.

Regional Security: If India aspires to become a regional power of some consequence, it has to become a net provider of security in the sub-continental context, and perhaps even beyond. These benign interventions might include military assistance in response to natural disasters, threat to or overthrow of legitimate governments, civil strife, illegal migration, organised crime, trans-national terrorism, or occupation of parts of a nation such as island territories, blockade of sea routes or channels, and illegal exploitation of the exclusive economic zone. Any Indian attempt to provide security will also be fraught with the risk of deepening regional rivalries, and might even raise suspicions among India's neighbours. So how does India envision the security requirements that include peacekeeping, peace making, and post conflict stability operations in the regional context? How does it acquire the capabilities that are required to meet even the most minimal set of operational contingencies? India will have to make expensive choices with respect to military capabilities in terms of interoperability, and increased endurance and reach. Finally, it will need to integrate the three services to maintain the capabilities if it seeks to provide regional security.

Readiness Challenges

Some concerns that impede the country's defence preparedness to face various internal and external threats, and the ability to deliver military capability for out of area contingencies, are discussed. These can be seen at six levels: policy, planning, doctrinal, capability development, civil-military relations and professional military education.

First, the absence of an overarching national security policy handicaps the defence policy makers, planners and practitioners at the operational and tactical level, and leads to military choices which at times may not have the sanction of the government. Several defence analysts and experts in the country have argued for a strategic defence review, which is most essential. Second, considering that the key to military success lies in integration of the three services, there is a need to identify the common operational and logistical

footprint. This alone can enable the formulation of joint operating protocols, procedures and practices. At yet another level, there might be a need to re-evaluate the teeth to tail ratio (T3R), and consequently maintain an efficient, lethal and capable war fighting machine. Inter-service integration and right sizing of the services alone can help forge the readiness needs of the 21st century. Above all, there will be a need to integrate the Indian armed forces capabilities with the national security structures and decision making failing which the mistrust between the two components will continue to prevail.

Third, the Indian armed forces have seen considerable doctrinal evolution and capability development in the past decade or so. However, the problem with these doctrines is that they have been developed independent of each other, and acquired at different points of time. The organisational motivations to formulate them were also different. From readiness point of view, the key requirement will be to harmonise these doctrines in conformity with the threats of the future. Six military strategies and a few inter-linked assume importance.

- One, there is a need to evolve a border management framework, and a 24x7 border security strategy, to guard the country's frontiers from infiltration, intrusions and incursions, and acts of demographic inversion. Technology and inter-organisation synergy will form the basis of an effective border management strategy.
- Two, there is a need to evolve a multi-agency framework, and an appropriate counter terrorism strategy, to deal with internal security threats. This should be a scalable strategy wherein the armed forces constitute the last instrument of force. Till such time the paramilitary organisations are fully trained and equipped to deal with these threats, the internal security situations especially along the border areas might continue to be handled by the army. Good intelligence, sound counter terrorism drills and inter-agency cooperation must form the basis of this counter terrorism strategy.
- Three, there is need to maintain sufficient conventional warfare capabilities on land, air and sea to deter or dissuade

the powerful neighbours from indulging in any military misadventure. Increasingly, this capability will have to carry a seaward bias wherein a more capable tri-service force will have to secure our trade and commerce interests in the Indian ocean region, and even beyond. Hi-tech weapon platforms, organisational cohesion and speed in the delivery of combat power will form the basis of India's conventional war fighting strategy.

- Four, and if need be, a multi agency approach comprising elements of foreign policy, the defence establishment and the civil affairs departments will be necessary to deliver regional security. Given India's size, it might be natural for countries in the region to expect assistance from New Delhi in times of crisis. Varying military and non-military contingencies might demand different kinds of response action. However the common denominator will be the immediacy of assistance that may be required. The Indian armed forces will have to build sufficient intervention capabilities to successfully render any military assistance. While response to natural disasters could be readily accepted, the politico-military interventions might be sensitive and become contentious.
- Five, a secure and survivable second strike nuclear capability will be necessary to back up India's conventional military prowess. This will involve the efficacy of the nuclear doctrine and the arsenal to the satisfaction of the controlling headquarters and the triad units. In the absence of adequate operating confidence levels among the nuclear triad units, the resulting nuclear doctrine and strategy might be unable to communicate the desired nuclear deterrent effect to the adversaries.
- Six, there is a need to evolve a counter strategy to deal with emerging disruptive threats such as biological, cyber, space, electronic warfare etc. Developing strategic responses to such emerging threats will be a principal doctrinal need in times to come.

Currently there are structural limits to developing the appropriate defence capabilities. India's military capability development is driven by large-scale defence imports especially in the category of hi-tech weapon platforms and systems. The temptation to develop everything indigenously from an assault rifle to main battle tank to advanced combat systems have yielded far and few successes. The current stasis in technology indigenisation can be remedied by creating better facilities for research, development, production, and correction in the acquisition processes. But even if these are successfully implemented, there is one aspect that simply cannot be ignored. The demand for advanced weapon systems in the Indian armed forces is relatively small, and the resulting economies of scale might not warrant developing end-to-end technical know how. In the context of procurement processes, there is an urgent need to graduate beyond the first generation reforms centred on excessive procedure-isation and move towards timely delivery of capability needs.

Fourth, the civil-military relations are at the core of any national security framework and the decision-making process. While explicit political control over the military cannot be questioned, the need to involve the armed forces as equal partners in the decision-making process is critical. Cross-pollination of national security bodies with defence expertise could contribute to the growth of strategic thinking and understanding on matters military. In the short-to-medium term, it would entail the functional integration of the MoD and service headquarters, creation of a chief of defence staff (CDS), representation of military staff in national security structures, leveraging military diplomacy in pursuit of India's foreign policy objectives, consistency in defence resourcing and expenditure, reforms in the acquisition process and defence industry, and ensuring preparedness for a range of military challenges and threats.

Fifth, military leaders must think critically and demonstrate professional acumen to lead the rank and file in difficult situations. They cannot be complacent when it comes to producing leaders that are capable of meeting the challenges at the tactical, operational and strategic level. Increased reliance on technology will imply a corresponding shift in the organisational culture, training and education. As a matter of national security interest, it is expedient

to invest in professional military education (PME) in order to train and develop officers capable of dealing with complex operational contingencies of the future. An institution such as the Indian National Defence University (INDU) designed to train the military leadership on a wide range of national security issues on establishment will have immense long term strategic value.

The Way Forward

The changed security environment calls for shaping ready and relevant hard power, and which might have to be managed differently in the future. A few issues that merit attention are discussed below.

- First, understanding the changing role of the military when there are increasing limits to the use of force, and the complexity of the inter-relationship between diplomacy, external defence and internal security. Militaries will increasingly be encumbered with non-traditional threats and “foreign policy type” responsibilities, and there would be a greater need to partly militarise the diplomatic machinery. As government resources would never be enough to pursue pressing national interests and concerns, a measured devolution of diplomatic roles to the military would become inevitable.
- Second, the formal relationship between the military and several other branches of the government might require a serious reorientation. How well, and to what extent, the military and the government might communicate with each other, and what more could be done to reduce their differences will alone maximize the use of resources in pursuit of national security objectives. In today’s rapidly changing world a sound politico-military relationship should form the basis of any national security policy. This argument emphasizes the important role of the military in high level decision making, resource allocation, force development and application.
- Third, how far should the military attempt to influence defence policy and higher level decision making. An overdose

of military influence on political outcomes can erode civilian control in a democracy. It is important to address issues of civil-military friction candidly and honestly to evolve a healthy civil-military relationship.²⁰¹ There will be a need to disaggregate the individual leverages of the country's defence industry and the scientific community on policy issues, which have contributed to this rivalry.

The challenge therefore lies in producing a politically conscious yet apolitical military leadership.²⁰² Military leaders who can reconcile the centrality of core institutional values with their personal opinions are required. This neither means producing institutional yes-men, nor a leadership that places the organisation over institutional values. Since serious change could be impeded by institutional mindsets, a profound shift in the vocabulary and imagery of the stakeholders is vital. There will be a need to alter some of the longstanding military traditions, assumptions and processes. It would however be important to make this change through small but incremental steps. Strong commitment demonstrated at the highest level and an amicable reasoning environment can expedite the process.

Summary

This chapter examined the problem of building India's hard power in the twenty first century. It is argued that India's capacity to master the creation, deployment and use of military instruments is still not assured at this point in time. Its success will depend greatly on how it manages the disconnection between the strategic opportunities, the threats and the challenges that have been identified. India might not even succeed in this endeavour because it lacks "an instinct for

²⁰¹ Harinder Singh, 'New Vocabulary and Imagery', IDSA Web Commentary, August 3, 2010.

²⁰² Ibid.

power.” In other words, the country’s innate reluctance to use force to secure the desired political outcome. India still remains a relatively inward looking state that has focused more on “sacrificing” hard power rather than “maximizing” it. In this case, India will have to be content with remaining a middle level power for at least for some time to come. And if that position is to be corrected, then perhaps the “transformational strategies” that are often spoken about may turn out to be important for building a strong Indian military capability.

9 Formulating India's Military Readiness Strategy

Introduction

Historically India has lacked in maintaining requisite levels of defence preparedness. From the initial delay in sending troops to defend Kashmir in 1948 to the two decade and a half long pause in the testing of the nuclear weapons, India's experience with use of military force has been slow, and only in response to grave internal threats or external provocation. India's disastrous border war with China in 1962, as a consequence of an ill conceived "forward policy" exemplified its incapacity to fix the imperatives of military readiness to its foreign policy.²⁰³ The much acclaimed success in liberation of Bangladesh in 1971 too was marked by a few preparedness hiccups, when the then Army Chief sought to execute the military campaign only after the desired levels of preparedness were achieved. The Kargil intrusions of 1999 once again highlighted the gaps in coordination and dissemination of intelligence inputs, and deficiencies in the country's defence preparedness.²⁰⁴ This problem was again brought to fore in 2002, when a hasty mobilisation ordered by the government, and subsequent decisional stasis denied the country an opportunity to punish an errant neighbour.²⁰⁵ Given India's past history of military conflicts and confrontations, there is a need to formulate a readiness strategy that can withstand the numerous threats and challenges that the country faces today. This

²⁰³ Maj Gen DK Palit, *War in High Himalayas: The Indian Army in Crisis 1962*, Eastern Book Corporation, Calcutta, 1991.

²⁰⁴ General VP Malik, *Kargil: From Surprise to Victory*, Harper Collins Publishers, New Delhi, 2006, Chapters 2, 4, 5 and 9.

²⁰⁵ Lt Gen VK Sood and Pravin Sawhney, *Op PARAKRAM: The War Unfinished*, Sage Publications, New Delhi, 2003, pp. 145-170.

section discusses India's readiness strategy in terms of the broad approach and affordability. This analysis is further progressed at two levels namely the articulation of the readiness strategy and its synchronisation over several levels to illustrate its importance in the Indian context.

Approach and Affordability

Economic affluence and access to technology however seems to be changing strategic perspectives within the country, and the increased budgetary allocation for military modernisation is contributing towards growth of the Indian armed forces. India's capital expenditure on procurement of military hardware is expected to grow from USD 13.1 billion in 2010-2011 to USD 19.2 billion by 2014-15.²⁰⁶ This implies a compounded annual growth rate (CAGR) of 10 per cent from 2011 to 2015, however taking the inflation aspect into account the CAGR is expected to be marginal. India's expanding maritime responsibilities and interests necessitate an enhancement in naval capabilities to 160 plus ships by 2022, including three aircraft carriers, 60 surface and sub-surface combatant vessels and close to 400 aircraft. The Coast Guard too is set to triple its manpower and force levels over the next decade or so.²⁰⁷ Indian Army's land acquisition plans include upgrades and purchases of artillery, tanks and infantry tracked vehicles, missiles and air defence guns, and several infantry weapon systems. Major acquisitions by the Indian Air Force include the multi role combat aircrafts (MRCAs), Su-30 MkI, Tejas fighters, advanced and intermediate jet trainer aircrafts, upgrades for in-service aircrafts, airborne EW aircrafts and aerostats. All three services are extensively investing in surveillance devices, electronics, communications and IT systems to enable

²⁰⁶ CII-Deloitte report titled, 'Prospects for Global Defence Export Industry in Indian Defence Market', CII Indian Defence Industry Mission EUROSATORY 2010; CII-KPMG report titled, 'Opportunities in the Indian Defence Sector: An Overview', 2010.

²⁰⁷ Ibid.

network centrality in military operations. While at another level, Ashley Tellis argues that India's capacity to master the creation, deployment and use of military instruments is still not assured at this point in time.²⁰⁸ Whether it will succeed in this endeavour or not will depend greatly on how it resolves the three macro and five micro problems. These are identified as high rates of economic growth, the need for a strategic vision at the national level, and engaging the international system and strategic partnership to its own advantage at the macro level. The ability to tackle internal unrest and insurgencies, defend the country from external threats, provide regional security, deploy an effective nuclear deterrent, and build the defence industry at the micro level. In other words, while the affordability is gradually increasing, the Indian defence establishment still needs to evolve sufficient understanding, procedures and practises to ensure that requisite levels of military readiness are maintained at all levels.

Strategising the Readiness Concerns

In the given backdrop, the analytical framework developed by Richard K. Betts is considered appropriate to investigate the three fundamental readiness related questions in the Indian context: (Readiness for What? Readiness of What? Readiness for When?). This analytical framework assists in analysing the readiness concerns in terms of the likely threats, capability and time dimension respectively. These questions are examined against a wide range of military scenarios emanating from the continental, sub-conventional, maritime, asymmetric, non-traditional threats, and including out of area contingencies. In effect, this three tiered analytical framework developed by Betts brings richness and rigour to our overall understanding on military readiness. In absence of a clear theoretical understanding, this aspect is otherwise so much lacking in the Indian

²⁰⁸ Ashley J. Tellis, "Future Fire: Challenges Facing Indian Defence Policy in the New Century", transcript of a speech made at the India Today Conclave, New Delhi, March 13, 2004

context. And for a country that is innately defensive in its strategic behaviour, this understanding assumes even greater operational significance lest the excessive emphasis on military readiness detracts the country's policy makers from the primary national objective of socio-economic development. Simply put the framework provides the basis to formulate the policy choices by explicating the complex trade offs that are integral to the readiness debate. A brief explanation might be relevant before the three strands of the readiness argument are investigated in the Indian context.

- First, the expression “readiness for what?” explains which adversaries should the Indian armed forces be ready to fight against, and under what operational conditions, and according to what military doctrine or strategy. In fact, this line of analysis can enable us to throw significant light at how much military capability might be required to deter, or dissuade, or if necessary defeat the potential adversaries.
- Second, the phrase “readiness of what?” explains the military capabilities that might be required to marshal and deploy them in times of crises. This will include land, naval and air warfare capabilities both in the conventional and sub-conventional realm, their inter-se priorities, and how would boosting of one service could affect the operational efficacy of the other two services. Maintaining inter-service balance with relation to the emerging security challenges and threats would perhaps form the essence of this analytical exercise.
- And third, by when should the potential capability latent in a military force (which includes the country's economic capacity) can be brought up to actual combat needs. In other words, what should be the readiness status of the armed forces during peace and wartime.

The following table illustrates the military readiness needs in respect of the envisaged security threats (Readiness for What?); the military capabilities required to fight these threats (Readiness of What?); and the broad time horizon by which the required capability should be fielded (Readiness for When?).

Strategising India's Military Readiness Concerns

Nature of threat	Readiness for What? (Threat dimension)	Readiness of What? (Capability dimension)	Readiness for When? (Time dimension)
Continental military threats from China and Pakistan, in isolation or collusive.	The collusive nexus between China and Pakistan poses a major strategic challenge to India. China is known to have provided direct assistance to Pakistan for its nuclear weapons programme which in turn has emboldened our western adversary in some measure. ²⁰⁹ Pakistan believes that its nuclear capability can suitably deter India's conventional military edge. Separately though some stability prevails between China and India at the strategic level, China continues to exhibit marked military aggressiveness against India at the tactical level. ²¹⁰ This raises anxiety about their military intentions and capabilities. China	Clearly Indian security forces need to field a military capability to ward off military threats emanating from both the fronts. Maintaining sufficient force levels to cater to contingencies along the northern and western frontiers are therefore a must. In the west, India needs both - defensive and offensive capability - in the hills and plains sector. As regards China, the country needs sufficient land and air war fighting capabilities to deter or dissuade China from undertaking any aggressive military designs in the western, central	Operational readiness vis-à-vis Pakistan has to be maintained at reasonable levels at all times. This is especially true in the case of the hill sector where the Line of Control (LoC) is normally prone to military intrusions and infiltration by jihadis. India needs to maintain a ready and relevant military capability against Pakistan and without indulging in creating surplus capacities given the socio-political and economic health of the country. In this context, maintaining and sustaining large and monolithic formations to

²⁰⁹ China has helped Pakistan to build a reactor to produce weapons grade plutonium at the Chashma nuclear facility. It has transferred M-9 and M-11 ballistic missiles as also facilitated in the clandestine transfer of Taepo Dong and No Dong missiles from North Korea to Pakistan.

²¹⁰ Ibid.

Nature of threat	Readiness for What? (Threat dimension)	Readiness of What? (Capability dimension)	Readiness for When? (Time dimension)
	<p>and India have failed to resolve the boundary dispute despite some sixteen rounds of demarcation talks. Border patrol face-offs are frequent, and an armed clash if not contained, could escalate into a conflict. In recent years, the expansion of Chinese railroads further accentuates India's concerns regarding their infrastructural capacities in the T i b e t a n A u t o n o m o u s Region. The issue of Pakistan occupied Kashmir (PoK) is yet another area of concern between India and Pakistan that carries the potential of military conflict in the future, and still to be resolved. With China also showing greater interest in the Northern Areas, the PoK issue assumes a new salience between the two countries.</p>	<p>and the eastern segments of the international boundary. A conventional military capability backed by a range of strategic weapons systems would comprise the readiness needs vis-à-vis both countries. This capability will have to be tailored to enable smooth and quick deployment of the several components of the armed forces to counter the emerging threats and challenges. A deeper analysis would reveal that India needs to cater for "operational readiness" vis-à-vis Pakistan, or immediately deliverable combat potential. However given India's historical animosity and anxiety vis-à-vis China, the country needs to focus on "structural readiness" or long term defence preparedness given the nature of relationship between the two countries.</p>	<p>simply undertake punitive or retaliatory military action may no longer be relevant. Building structural readiness to measure up to threats emanating from China would require distinct levels of readiness that might come over time. This might call for long term capability development plans some even running into two to three decades. India needs to evolve affordable and achievable long term readiness plans to meet the military threats emanating from China and those that could emerge from the China-Pakistan military nexus.</p>

Threat	Ready for What?	Ready of What?	Ready for When?
Maritime threats covering the eastern and the western seaboard, and including India's littoral interests in the Indian Ocean Region	The Indian Ocean Region carries key security concerns in terms of India's trade, energy needs, and protection of island territories and exploitation of the EEZ. ²¹¹ This strategically significant oceanic region characterised by narrow navigational channels to its east and west can be easily interdicted or disrupted. ²¹² And the littoral spread in the oceanic region concerns several countries in terms of smooth flow of oil, raw materials and trade. India's long term maritime interests dictate that it should ensure smooth flow of sea borne commercial traffic and security of coastal	Indian Navy's primary responsibility is to deter any adventurism against India's maritime interests. Acquisition of naval platforms to maintain three dimensional, technology enabled and networked naval force capable of safeguarding India's maritime interests on high seas and projection of combat power across the littorals becomes important (refer Indian Navy's vision statement issued in 2006). Apparently India's naval development plans carry a distinct bias towards indigenisation especially with regard to the development of the	China's long term naval modernisation plans clearly dictate that the focus of the Indian navy should be on "structural" readiness or long term readiness so as to meet the Chinese challenge as and when it materialises especially with the fielding of their first aircraft carrier. In the meantime, there will also be a need to devote adequate attention to aspects of "operational" readiness in terms of

²¹¹ Indian Maritime Doctrine 2009, pp.57-58. A substantial part of India's industrial and economic activity is located within the EEZ, along the 7,516 km long coastline. India's EEZ is 2,013,410 sq km in area, which is equal to 66 per cent of the land mass, to which another 530,000 sq km is likely to be added as an extension to the continental shelf.

²¹² The primary choke points are the Persian Gulf, St. of Hormuz, Bab-el-Mandeb, Cape of Good Hope, Mozambique Channel, Six-degree channel, Eight/Nine-degree Channels, St. of Malacca and Singapore, Sunda St. and Lombok St.

Threat	Ready for What?	Ready of What?	Ready for When?
	<p>infrastructure and offshore assets and installations. In specific terms, it might include precluding the Pakistan Navy any room for manoeuvre over sea to indulge in asymmetric warfare directed against India through non-state actors. The PLAN-PN too could leverage their joint naval deployments in the future. The availability of basing facilities in the IOR and non-traditional challenges might cause the two navies to collaborate in the future.²¹³ The need to therefore evolve comprehensive security measures for protection of India's island territories and littorals will assume greater importance.</p>	<p>surface platforms. There is also shift in the navy's outlook from securing a certain number of platforms alone to net work centricity and satellite based communications. Naval diplomacy and cooperation also forms an important aspect in the long term capability development plan. The focus has to be clearly on the Chinese naval capabilities since Pakistan's capacity to field naval platforms is dismal. However its ability to leverage its naval basing facilities will have to be factored into the Indian context.</p>	<p>dealing with piracy on the high seas, coastal security, sea borne terrorism, safeguarding our littoral interests, and humanitarian and disaster relief tasks.</p>

²¹³ Cmde Ashok Sawhney (retd), "India's Naval Effectiveness for National Growth", RSIS Working Paper No 127, Singapore, May 7, 2010, pp. 22-24.

Threat	Ready for What?	Ready of What?	Ready for When?
Sub-conventional threats and challenges	India's large land and sea frontiers exacerbate the internal security problem. ²¹⁴ The long and porous borders with P a k i s t a n , B a n g l a d e s h , Myanmar and Nepal have been susceptible to illegal cross border migration and the movement of terrorist groups. Issues of uneven operational efficacy and control among the deployed security forces remains in the border belt, and its poor management have in the past had lead to volatile internal security situations. It has contributed to the rise of insurgencies in the border states of Jammu and	The Indian armed forces should be capable of supporting the sub-conventional demands of the nation, without diluting its conventional edge. These could include tackling a wide range of sub-conventional threats such as cross border, sea borne or trans-national terrorism and insurgencies, as also assisting the paramilitaries and state police forces in containing the internal unrest. ²¹⁵ These concerns emphasise the need to create and train sufficient CI and counter terror forces to include the fielding of Special Forces. ²¹⁶ The raising of sixty plus Rashtriya Rifles	In the short to medium term, the country's armed forces will have to maintain sufficient "operational" readiness in terms of capacity to field forces for counter insurgent operations. In that context, the Rashtriya Rifles, the Assam Rifles and the Special Forces will continue to be the salient components of the country's counter insurgency force, and in certain cases this will have to be supplemented by regular infantry units from the Indian army. However in the medium to long

²¹⁴ Ibid. p. 95.

²¹⁵ Brig RK Bhonsle, "India's National Aspirations and Military Capabilities 2020: A Prognostic Survey", in *Army 2020: Shape, Size, Structure and General doctrine for Emerging Challenges*, edited by Lt. Gen. Vijay Oberoi, KW Publishers Pvt Ltd, New Delhi, 2005, p. 141.

²¹⁶ Bharat Karnad, "Firming up the Critical Capability Triad", in *Army 2020: Shape, Size, Structure and General doctrine for Emerging Challenges*, edited by Lt. Gen. Vijay Oberoi, KW Publishers Pvt Ltd, New Delhi, 2005, p. 247.

Threat	Ready for What?	Ready of What?	Ready for When?
	<p>Kashmir, Punjab and the Northeast. The infiltration of Pakistan abetted groups continues to be an irritant. Incidents like the 26/11 are indicative of the use of the sea route to spread terror in the country. In case of Bangladesh, the issue of Indian enclaves within Bangladesh and vice versa, remains particularly sensitive. In recent years, the spread of naxal violence has been a major internal security challenge spanning several dozen districts along the India's rich mineral belt. The sub-conventional challenges could mutate into several other forms to include bio or chemical terrorism, and in a worst case nuclear terrorism. The recent reported incidents of nuclear waste material finding itself in the hands of scrap dealers could be yet another cause of concern.</p>	<p>battalions in Jammu and Kashmir, and the deployment of Assam Rifles in North East, for CI operations have immensely contributed to the development of India's sub-conventional doctrines and capabilities. Sub-conventional threats emphasise the need to build appropriate surveillance capacities and networks for timely dissemination of intelligence and technological precision to undertake surgical strikes. Technology is being increasingly leveraged by the western militaries to ease the load on human intensive counter terror or counter insurgent operations.</p>	<p>term, there would be a need to create a d e q u a t e "structural" readiness in terms of the Special Forces capacity and competence in tune with the sub-conventional and trans-national threats of the time. India also needs to invest in paramilitary capacities that are sufficient to deal with internal security situations of the like of the naxal movement.</p>

Threat	Ready for What?	Ready of What?	Ready for When?
Asymmetric and disruptive technologies	The potential future exploitation of emerging technologies such as nanotechnology, biotechnology, informational technology and dual use innovations by the adversaries to pursue a malicious military intent is yet another area of concern. ²¹⁷ The adverse impact of such disruptive capabilities, if possessed by transnational and non-state actors, is increasingly becoming evident. Exploitation of asymmetric capabilities by adversaries could carry severe military implications for the country in the future.	India needs to expeditiously develop and field requisite counter capabilities to protect the country's vital strategic assets and the populace from asymmetric or disruptive attacks by any of our adversaries. These will have to be seen in terms of technological capabilities required to be fielded both in the civilian and military domains. In fact, many of these capabilities will have to be deployed collectively and comprehensively at the national level rather than at departmental level alone.	The focus will have to be both short and long term. The short term readiness measures might have to be based on off the shelf counter measures. While in the long term, the desired readiness levels to ward off the asymmetric threats will have to be formulated and fielded under a macro and national level science and technology innovation or response plan. This alone will enable us to formulate a holistic approach to deter or defend the country from devastating or catastrophic asymmetric or disruptive attacks in the future.

²¹⁷ http://www.rsis.edu.sg/cens/publications/conference_reports/RSIS_ICEDT%20Report_171109.pdf

Threat	Ready for What?	Ready of What?	Ready for When?
Non-traditional engagements	The Indian armed forces have routinely maintained a large strength of troops in support of UN peacekeeping missions. Its practical experience in the planning and conduct of peacekeeping operations is fairly extensive. Besides this the country could be expected to respond for humanitarian assistance and disaster relief operations. In times to come, this may also entail creation of viable capacities for nation building or reconstruction effort in turbulent parts.	In the past decade or so, India has developed strong institutional capacities to enable timely and tailored deployment of UN contingents ranging in size from an infantry battalion to a brigade group with a full complement of logistical and administrative needs. This exposure has facilitated in imbibing the best practices that govern the handling of large scale humanitarian relief effort.	The focus has to be on “immediate readiness” in terms of logistical, transportation, and specialist services to be able to respond to catastrophic humanitarian situations. It would entail earmarking of tailor made response teams, equipment and relief material.
Force projection for out of area contingencies ²¹⁸	Given India’s size, its growing economic and military prowess, geographical location, it would be natural for nations in the neighbourhood to request	In order to respond to any of these contingencies, it would be necessary to have advance planning and preparations. There would be the necessity to	In the immediate context, the country should be able to deploy suitable components for non-traditional security tasks such as dealing

²¹⁸ For an interesting analysis see Walter C. Ladwig, ‘India and Military Power Projection: Will the Land of Gandhi Become a Conventional Great Power?’, *Asian Survey*, Vol. 50, No. 6, p. 1162-1183. The author argues that while the Indian armed forces have articulated the need to operate beyond the country’s immediate borders, it is highly unlikely that India will achieve its power projection objectives in the medium term.

Threat	Ready for What?	Ready of What?	Ready for When?
	<p>assistance from India in times of crisis. The crises could range from threat to democratically elected governments to natural disasters. It could take several other forms in the future but the common denominator would be the immediacy of assistance that may be required. India would therefore have to build different levels of capability to successfully render assistance depending on the nature of the problem that a nation may be facing. Assistance may be requested to address different situations. They are: natural disasters; threat to or overthrow of legitimate governments, civil strife, illegal migration, organised crime and trans-national terrorism; occupation of parts of a nation such as island territories, blockade of sea routes or channels,</p>	<p>continuously evaluate likely scenarios from time to time and prepare response plans. In addition, it would be necessary for India to build capacity for accurate and timely intelligence and warning. In order to achieve the desire capacity to undertake various responses, it would be necessary to build the following: (a) Build requisite dual purpose and long term response capabilities; encompassing a wide range of civilian and military competencies and capacities; and benchmark the baseline specific capabilities. (b) Ensure adequate preparedness for each type of operation for timely deployment to ensure initial response; transformational; and stabilisation of the situation. (c) Such situations will demand the presence of well trained and integrated leadership; crisis</p>	<p>with natural disasters, rescue of Indian nationals on foreign lands etc. However in the long term, there might be a need to be able to deploy sizeable military components in pursuit of our national interests or operational contingencies in the immediate neighbourhood or even beyond.</p> <p>@ Such as cyclones, floods, famine and drought, island inundations, earthquakes, pandemics, air crash, shipping accidents, oil spills, nuclear or chemical leakages or NBC disasters</p>

Threat	Ready for What?	Ready of What?	Ready for When?
	and exploitation of exclusive economic zone). While response to disasters may get support of the world community, intervention may be contentious.	negotiators or specialists; establishment of a 24x7 command and control centre; and a well established response control hierarchy.	

The foregoing analysis establishes the readiness demand which might be placed on the Indian armed forces in the short, medium and long term. It further explains that the defence preparedness needs of the country have to be seen at two distinct levels: structural and/or operational level. In simple terms, the military readiness needs have to be “operational” in the case of Pakistan; whereas it will have to be “structural” in the case of our northern adversary. Consequently conventional and sub-conventional threats emanating from Pakistan demand immediately deliverable military readiness in terms of the ready and relevant combat potential of the land, air and naval forces. It should be prepared to deal with incidents of cross border terrorism in the state of Jammu and Kashmir and elsewhere as well as military intrusions in the hilly terrain, and possibly a military misadventure in the plains or the desert sectors. Though, the latter eventualities are least likely to occur in the future. In other words, short term or “operational” readiness is far more significant than the long term or “structural” readiness with regard to Pakistan, although the aspect of structural readiness simply cannot be ignored. Since the military structure and strategy is broadly in place, the operational focus of the Indian armed forces will be on maintaining, upgrading or sustaining the existing war fighting capability. Besides, it will involve ensuring the overall preparedness of the counter insurgency forces such as the Rashtriya Rifles and Assam Rifles to fight insurgencies beyond the capability and capacity of the paramilitary forces. Fighting insurgencies is again a function of operational readiness and day to day counter insurgent strategy.

The Chinese threat being long term requires a focus on “structural readiness” in terms of the mountain warfare, maritime and strategic

force structures, consistency in military modernisation, development of strategic infrastructure and wherewithal, and creation and fielding of asymmetric war fighting capabilities. There is therefore a fundamental necessity to evolve a strategy to address India's security concerns in relation to China. The country's 4000 kilometres plus long border with China spans a difficult mountain terrain, different revenue jurisdictions, and the involvement of several security agencies and operational control mechanisms. Furthermore, the punctuation of this frontier by the sovereign states of Nepal and Bhutan technically complicates the overall security management of the border areas. As such, it can be argued that the Sino-Indian frontier poses a structural problem in terms of its management, the development of road and rail infrastructure, the overall availability and deployment of security forces, and their command and control dilemma. Several decades of neglect both at the macro and micro level today places a heavy demand on the preparedness of this sensitive frontier. China's brisk military modernisation and infrastructural development seems to be increasingly accentuating the capability gap between the two countries. The Chinese technological strides in the development and fielding of strategic weapon systems and disruptive war fighting capabilities pose an additional military challenge. It might therefore be prudent to designate India's military readiness needs vis-à-vis China in "structural" terms and not merely at the "operational" level.

Other functions that are increasingly assuming importance in current times, are those of providing humanitarian aid, disaster relief, and other non-traditional and trans-national threats demand readily deployable units and assets that include special forces, the first response units, field intelligence agencies and relief material. In other words, the tabulated analysis provides clarity in terms of the best use that the available money, manpower and material (3Ms) can be put for delivering military preparedness in context of the conventional, sub-conventional and non-traditional threats. However, what the analysis does not show is the broad organisational approach and the sequencing of the readiness activities over a given time horizon. The following sub-section recommends a framework for synchronising the military readiness strategy at the macro level.

Synchronising the Readiness Strategy

The following table attempts to explain a possible format to synchronise India's operational and structural readiness actions in the medium to long term. It, in a way, highlights the relationship that needs to be established in the 'heart-ware' and 'hard-ware' of the Indian armed forces in meeting the security challenges and threats of the future.

Synchronising the Readiness Strategy²¹⁹			
Type of Readiness	Manpower	Organisations	Material
Peacetime readiness (linked to affordability)	Military Training	Force Conception	Capability Development
	Basic	Raisings	Research and Design
	Advanced	Disbandment	Development
	Specialised	Re-affiliations	Acquisition
Structural readiness (linked to long term utility)	Doctrinal Development	Force Transformation	Logistical Sustenance
	Doctrinal thinking	Field Headquarters	OFs/DPSUs/ Trade
	Strategy development	Combat formations	Logistic depots and bases
	Concept evolution	Combat support	Expeditionary capacity
Operational readiness (linked to immediate deliverability)	Military Effectiveness	Force Cohesion	Operational Logistics
	Battle drills	Combat units	Supplies
	Battle procedures	Combat formations	Replenishment
	Battle exercises	Joint Task Forces	Surge capacities

²¹⁹ The table is an adapted version of the Betts Model on synchronising military readiness, p. 216.

Type of Readiness	Manpower	Organisations	Material
Mobilisation readiness (linked to employability and employability)	Deployment	Employment	Sequencing
	Active	Geographic theatres	Equipment
	Reservists	Combat zones	Forward Logistics
	Civilian capacities	TBA	Reverse Logistics
Battle is enjoined			

The above analysis draws a clear distinction between the elements of readiness namely money, manpower and material that collectively contribute to operational preparedness at four levels: peacetime, operational, structural and mobilisation. Peacetime readiness is contingent upon affordability and often revolves around the training of field forces, their structuring and capability development. Operational readiness focuses on the immediate deliverability of the combat potential and therefore commonly focuses on battlefield effectiveness, organisational cohesion and operational logistics. Structural readiness is generally futuristic in outlook and ideally focuses on long term doctrinal and capability development, force re-structuring and transformation, apart from logistical sustenance and expeditionary capacity. Above all, the mobilisation related readiness enables a security force to speedily deploy itself and enable the sequenced employment of its several components in battle.

Having discussed the several levels of military readiness, it is important to know how these levels can be attained. The pace and trajectory of military readiness can be depicted as a linear or cyclical image. A linear image is the continuous and incremental injection of funds and technology for developing war fighting capability. Continually adding military mass would come at significant cost, but not necessarily offer the best military solution to tackle the evolving situation. Military readiness so achieved can be visualised as a staircase - where one keeps buying readiness without any clear idea regarding its military utility or outcome. On the other hand, the cyclical image of military readiness implies building war fighting capabilities for the medium to long term, and which peak at an

appropriate time. A cyclical approach is considered to be militarily more beneficial than the linear approach because it enables a security force to be ready and relevant at an optimal cost and effort. Being “ready and relevant” for meeting the foreseeable and some unforeseeable contingencies is the essence of the cyclical model of military readiness. The Indian defence policy makers and practitioners need to recognise this planning aspect of readiness. Given the country’s economic affluence, there are experts who argue that the country’s defence establishment has been afflicted by the technology acquisitions (one might read this as the staircase model) towards building up military readiness. The sudden surge in India’s procurement of big ticket items might have to be viewed more critically in order to ensure that the country’s armed forces are not laden with those capabilities that might have limited utility in the future.

In this context, the need to clearly explicate the military conflict scenarios of the future assumes importance. India might have to suitably balance out the military capability needs against the analytical frame discussed above. Three issues assume importance here. First, the need to develop a thorough understanding of the theoretical constructs of military readiness among India’s defence policy makers and practitioners. Second, the need to develop effective management tools to measure and report the levels of readiness across the three military services. And third, the need to establish oversight mechanisms that constantly assess the levels of readiness attained, and in turn, suggest way and means to re-balance the utilisation of money, manpower and material in creating and maintaining the armed forces of the country.

Summary

This chapter discussed the possibility of reformulating India’s military readiness strategy in the years ahead. It is argued that India’s economic rise and access to technology seems to be changing perspectives within the country, and the increased resource allocation for military modernisation is contributing to the growth of the Indian armed forces. However an acquisition oriented approach

alone cannot deliver the readiness required. There is an express need to strategise India's military readiness concerns in terms of possible threats (readiness for what?), capabilities required (readiness of what?) and likely time frames (readiness for when?). Such an analysis alone can help India decide on the nature and levels of military readiness required - peacetime, operational, structural and mobilisation related. Simplistically speaking India needs operational readiness when it comes to dealing with Pakistan, and structural readiness to ward off military threats and challenges from China in the foreseeable future. The chapter further emphasises the need to synergise the military readiness strategy in terms of the money, manpower and material available and whether the readiness building approach has to be linear or cyclical in the medium to long term.

10 Managing the 3Ms: Money, Manpower and Material

Introduction

Money, manpower and material determine a state's capacity to create and leverage its hard power to fulfil its national security objectives. A deficiency in any of these three constituents could create an imbalance, which in turn would impact the development and fielding of military capabilities, and eventually the desired levels of readiness in battle. India's past military experience is replete with instances when a single or combination of these three elements had a catastrophic effect on the military or battle outcomes. Clearly the 1962 Indo-China conflict proved to be a disastrous war because of the utter lack of "war fighting material" apart from the foreign policy failures that hampered the effectiveness of the military. In the late eighties, the military intervention in Sri Lanka questioned the effectiveness of the "manpower" in tackling ethnic insurgency. The Kargil intrusions of 1999 once again highlighted the large "material" deficiencies that had affected the preparedness of the Indian armed forces. A deeper analysis of India's military engagements since independence will throw up several gaps and deficiencies in the availability and the utilisation of money, manpower and material in conflict situations. While the historical examination of India's "unreadiness" for war can be the subject of a separate study, this chapter discusses the importance of the elements of military readiness namely money, manpower and material, and outlines a broad approach for their future management.

Money

India's ambivalent attitude towards defence expenditure in the past decades is evident in the fluctuating allocations.²²⁰ The budgetary

²²⁰ Admiral Sureesh Mehta, 'Changing Roles of Navies in the Contemporary World Order with Specific Reference to the Indian Navy', National Security Lecture Series Speech, IDSA, August 13, 2008.

allocation in recent years has been pegged at around two per cent, and as per the thirteenth finance committee report, it is expected to fall to 1.76 per cent in FY 2014-15. However given the northward direction of the military expenditure of our principal adversaries, the necessity to invest in requisite war fighting capabilities and maintenance of operational efficacy becomes inescapable. It is thus essential to make an assessment of the current trends in India's military expenditure, and the necessity of making suitable changes in the future to achieve the desired readiness levels. As per the defence expenditure figures available, India's official defence spending has gone up tenfold in the last decade or so. The annual expenditure which stood at Rs 14,416 crores in FY 1989-90 has risen to Rs 1,47,344 crores in FY 2010-11. It is not therefore surprising to note that India today stands among the ten largest military spenders in the world. Although in terms of per capita military expenditure, it is still very low and pegged at some 21 dollars per citizen (as against the global average of \$183).²²¹ Given the extended frontiers both continental and maritime, the budgetary allocations need to be consistent with the external and internal challenges faced by the country's armed forces. The issue assumes greater significance in the context of our principal adversaries, who can easily ratchet up their defence expenditure. China has the resources to internally fund their military modernisation, while Pakistan relies on the US military aid that it receives as part of its support to the global war on terror. Some \$12 billion have reportedly been received by Pakistan between the years 2002 and 2008, and an additional amount promised under the AfPak policy, which could degrade the conventional military edge that the Indian armed forces possibly enjoy. It is therefore not surprising to note that the US military aid has evoked much concern in domestic circles, and consistent calls for raising the defence budget to at least three per cent seems legitimate.

An understanding on the country's defence funding therefore assumes salience. Historically the revenue component of the defence

²²¹ *SIPRI Yearbook 2208: Armaments, Disarmaments and International Security*, Oxford University Press: Oxford, pp. 178, 2008.

budget has accounted for a major share of the military expenditure. But in recent years, this trend has been changing rapidly. For instance, the revenue to capital expenditure ratio has substantially narrowed from 70.7: 29.3 in FY 1989-90 to 54.5: 45.5 in FY 2008-09.²²² Among the three military services, the Indian air force continues to be the most capital intensive and accounts for nearly 40 per cent of the total capital expenditure, while the Indian army and navy are at par with each other (27.8 per cent and 25.2 per cent respectively in 2008-09). With regard to the revenue budget, the allocation is army heavy because of its sheer size when compared to the other two services. For instance, in the year 2008-09, the inter-service revenue budget share stood at a ratio of 65.4: 13.0: 19.6 for the army, navy and air force respectively. The revenue budget is expended on pay, allowances and purchase of stores, and to a lesser extent on military transportation and works. Any reduction in revenue expenditure can only be possible if this budgetary allocation is utilised and managed appropriately. A lean and mean force fashioned to meet the security challenges and threats in the Indian context could enable some scaling down of the revenue expenditure, and in turn, ensure increased availability of resources for capability development.

Separately, the increase in budgetary allocation in recent years under the capital head has led to some big ticket purchases by the navy and air force, though much of them are still in the pipeline. Notwithstanding this, the capital budget utilisation too is riddled with problems. These not only include the inadequate prioritisation of envisaged capital acquisitions, but also under-utilisation of capital funds that in the past have ranged between Rs 1500-6500 crores. These have largely been in the case of air force and navy which have severely limited the readiness of these two services. Several experts including the defence policy makers and practitioners attribute this inadequacy to the inefficiencies of the defence procurement process.²²³ The Comptroller and Auditor General

²²² Laxman Behera, 'India's Defence Spending: A Trend Analysis', *Journal of Defence Studies*, Vol. 3, No.2, April 2009, New Delhi, pp. 133.

²²³ *Ibid*, pp. 134-135.

(CAG) attributes this to several factors to include the delay in approval of the long term perspective plans, deficiencies in the formulation of the qualitative requirements, inadequate vendor survey and identification, lack of objectivity in technical and commercial evaluation, inordinately large number of processing points, and the multiplicity of dealing agencies and with dispersed centres of accountability.²²⁴ At yet another level, and despite the Group of Ministers (GoM) recommendations issued in 2000, and creation of the Defence Acquisition Council (DAC), the capital acquisition process continues to be uneven in the Indian armed forces, and unable to deliver on the country's military readiness needs.

The organisational challenge therefore today is to ensure the effective utilisation of the budgetary allocations both under the capital and revenue heads. Three issues arise here.

- First, is to examine if there is any scope for the re-balancing of the allocations under the capital and revenue budget head in the current circumstance. Clearly an accretion in the capital head allocation at the cost of military's revenue expenditure, does not seem feasible because of the large pay and allowances disbursements, and expense on account of purchase and maintenance of stores that come under this head. A reduced budgetary liability on these two counts i.e. manpower and purchase of stores alone can release the much needed funds for military modernisation under the capital head. Some experts therefore argue that the right-sizing of the Indian armed forces, by way of technology substitution and re-setting the teeth to tail ratio (T3R), could release resources from the revenue head for capability development. A serious strategic defence review alone might provide some solutions to the problem of force right sizing for the future.
- Second, the acquisition of big ticket military items currently underway both in the Indian navy and air force is likely to

²²⁴ Ibid, pp. 135-136.

place heavy demands in terms of their life cycle costs in due course, and this in itself will inhibit the scaling down of revenue expenditure, and in turn might even lead to the overheating of the revenue budget head. Acquisition of expensive naval platforms, next generation aircraft, modern battle tanks and artillery guns and missiles not only require mega sums of capital expenditure but also corresponding revenue expenditure on infrastructural support and life cycle costs to ensure their battle readiness. In other words, big ticket military acquisitions made under the capital head often tend to inflate the maintenance liabilities under the revenue head.

- Since a rebalancing of the capital and revenue expenditure might look rather difficult if not unlikely in the foreseeable future, a measured hike in the country's defence expenditure, as a percentage share of the national GDP, and as suggested by several military and non-military experts, remains the only alternative. This brings to fore the debate on the prudence of "additional" allocation of resources versus their "efficacious utilisation". Since organisational efficiency through efficacious utilisation of the allocated resources cannot be ushered in at short notice, it might be important to rely on the former till such time as the new business practices are put in place. As the Indian economy grows in size, the overall defence expenditure in the future, as a share of the GDP, could be calibrated to lower levels. In any case, this allocation will have to be within the larger rubric of national security and circumstances of the time.

At yet another level, there is scope for substantial improvement in the calculation, presentation and interpretation of the country's defence estimates.²²⁵ The annual defence estimates presently include eight demands for grants (two pertaining to "ministerial civil

²²⁵ Amit Cowshish, 'Potential Improvements in Defence Service Estimates', *Journal of Defence Studies*, Vol. 3, No.2, April 2009, New Delhi, pp. 95-109.

services” and “defence pensions” are excluded) that resource the capital and revenue expenditure of the services, ordinance factories, and research and development laboratories. These grants though meant for military specific tasks have over time been used for several quasi-military or paramilitary activities such as internal security, military farms, national cadet corps, resettlement and health schemes of ex-servicemen, road construction etc which might not rightly fall under the purview of the defence ministry. Repatriating some of these activities to the concerned ministries or appropriate agencies might free up some additional funds for defence under the revenue head, and thus contribute towards enhancing and maintaining war fighting capability. It might also be a good idea to identify the “unspent” or “ill-spent” money under each of the revenue code heads, in order to rationalise and improve budgetary utilisation. In recent years, the publication and internal circulation of the “part two” defence service estimates has afforded reasonable clarity on the military expenditure beyond capital and revenue budget heads.²²⁶ The long term answer perhaps lies in injecting greater clarity and transparency into this document in terms of the allocation and expenditure from capital-revenue ratio, to the main code heads under each category, to the sub and sub-code head levels.²²⁷

A clear assessment of the country’s defence expenditure with regard to the resources allocated for capability development and maintenance in terms of skilled manpower and serviceability will be a first step towards identifying the problems that inhibit effective utilisation of the defence budget. Coupled with the possible re-balancing of allocations under the capital and revenue budget heads, the fund utilisation might become more efficient in the future. However given the technological leaps that war machinery is making world wide, it is debatable whether India’s military preparedness could be achieved with a less than three percent allocation in the ensuing decade. The capacity of the Indian armed forces to squeeze

²²⁶ Ibid, pp. 103-105.

²²⁷ Ibid, pp. 108-109.

out desired levels of readiness from whatever resources are placed at their disposal is another important aspect. Whether military readiness comes through judicious use of the allocated resources or earmarking a large percentage of GDP for military expenditure is the big question. A combination of the two might deliver the desired readiness levels in the short to medium term.

Manpower

Manpower is a critical to the organisational efficiency and operational effectiveness of the armed forces. More importantly, the expanding definition of national security to include traditional and non-traditional security threats poses an important challenge to capacity building in manning levels. With both internal and external threats to India's security - many which cannot be clearly defined - national security sector requires high levels of skill and competence ranging from expertise in complex military technologies down to tasks which are paramilitary in nature. A mix of conventional and sub-conventional competencies is today a necessity in any military organisation. And therefore, flaws in the selection, training, motivation and compensation of the military manpower could seriously impinge upon the effectiveness of the armed forces.²²⁸ Two issues assume particular importance in this regard: the emerging international trends in the management of military manpower; and the man management challenges specific to the Indian context.

Trend Lines: With economic leverages gradually displacing the importance of military power as an indicator of national strength, the military force levels have gone down in numerical strength world wide. Prominent examples of this, in the past decade and a half, have been the force reviews in China and some of the Western militaries such as the United States and the United Kingdom. This can be ascribed to two reasons. First, military manpower is becoming exceedingly expensive to recruit, train and maintain, and second, the revolution in military affairs today enables a large number of

²²⁸ RK Bhonsle, 'Human Resources in Security Sector: An Integrated model for the 21st Century', *Journal of Defence Studies*, Vol. 4, No.4, October 2010, New Delhi, pp. 49.

manual military tasks to be performed by technology and civilian manpower. Advancements in military technologies such as intelligence, surveillance, and reconnaissance (ISR), precision guided munitions (PGMs), communication networks, and unmanned aircrafts have drastically reduced the requirement for manpower on the battlefield. The technical threshold of the armed forces therefore needs to be much higher than it was a decade ago. Similarly the increased availability of cost effective civilian solutions and technologies enables easy execution of the back room logistic tasks and combat support duties, thereby facilitating a lean and mean fighting force. The focus today is clearly on the technological or qualitative upgrading of the armed forces with particular emphasis on its quantitative downsizing.²²⁹ Reduction in manpower has other spin offs as well - most importantly, the integration of structures and services across the operational spectrum for greater synergy and effect. It is increasingly leading to the pooling of military resources world wide, as witnessed in multi-national conflict resolution and peace keeping operations. It has also necessitated an accretion in the world wide demand for Special Forces to address the emerging sub-conventional threats, and commensurate increase in strategic lift capacities to project desired military capabilities over large distances in the shortest possible time.²³⁰

Challenges: The challenges to the management of the military manpower in the Indian context are therefore manifold.

- First, the acute shortage of officers particularly in the case of the Indian army is a cause for concern. The overall officer corps deficiency was pegged at 14,300 plus officers across the three services in July 2009.²³¹ This shortage of officers continues to have a deleterious effect on the war fighting capability of the country and particularly on the army's

²²⁹ Gurmeet Kanwal, 'Salient Issues Affecting Defence Manpower in India', *Journal of Defence Studies*, Vol. 4, No.4, October 2010, New Delhi, pp. 34-37.

²³⁰ Ibid, pp. 36.

²³¹ RK Bhonsle, Ibid, pp. 52.

performance in counterinsurgency operations. An overall shortage of 11,387 officers in the Indian army needs to be addressed before the negative effect on the performance of the combat units becomes manifest.²³²

- Second, the quantitative right sizing of the armed forces cannot be undertaken so easily because of the land and maritime and internal threats facing India. What is perhaps feasible is a reduction in the logistical components of the army, navy and air force, because it would be possible to contain the neighbourhood threats partly through existing or future civilian logistical capacities. Right sizing the teeth to tail ratio is a serious need of the hour.
- Third, the technical threshold in the three services is still fairly low when compared with the Western militaries. While the navy and air force have attempted some improvements in this regard, the army is still to undertake substantial organisational reforms to upgrade the technical threshold of its rank and file. Skill development today needs to transcend diverse military environments and competencies that a soldier might confront in the future.
- Fourth, there is a need to invest in a military leadership that can think critically, communicate effectively, and lead the rank and file in dangerous and difficult situations. Leadership skills are particularly important for the officer corps, but they also cannot be ignored in the case of the non-officer rank personnel.
- And lastly, there might be a need to build a well trained reservist cadre, on lines of the National Guard in the United States, which can assist in bringing down the overall combat strength of the armed forces. The existing Territorial Army structure perhaps needs a serious revamp in terms of their organisational strength, capability, training and capacity to

²³² Ibid.

meet the paramilitary or quasi-military challenges of the future.

Above all, there is a need to ensure retention of the skilled military manpower such as pilots, doctors and engineers through monetary incentives and transparent promotion policy. A younger command profile especially among the frontline combat units and field formations is equally important for a ready and relevant combat force structures in the future.

Material

The global defence industry has undergone a serious change in the last two decades. Military production has increasingly been concentrated in the hands of a few but large firms around the globe.²³³ More importantly, in the aftermath of the Cold War, the defence industry have also witnessed several mergers and acquisitions across the national boundaries. The emergence of mega defence conglomerates such as Lockheed Martin, Boeing, Northrop Grumman, BAE Systems, Thales etc demonstrate this trend line. These developments coincided with the liberalisation of the Indian economy and its commendable growth in real terms. However despite these developments the armed forces continue to be hobbled by the nation's inability to deliver on the readiness needs of today and tomorrow. The problem is essentially fourfold: lack of long term defence planning in the country; lack of indigenous research and development capacities; defence production; and paucity of infrastructure to maximise the operational effect of the existing military capabilities.

Defence planning: Effective defence planning has suffered for several reasons in India.²³⁴ In the absence on any formal document or strategic guidance, the formulation of a coherent and consensus

²³³ Richard Bitzinger, 'Developments in Major Arms Producing Countries:1998-2008', *Journal of Defence Studies*, Vol. 3 No. 3, July 2009, New Delhi, pp. 23.

²³⁴ NS Sisodia, 'Planning for Sound Defence Budgets', *Journal of Defence Studies*, Vol. 3, No. 2, New Delhi, April 2009.

based defence capability development plan becomes difficult. Unlike in the West, where a national security strategy, and in turn the national military strategy and capability, is evolved on the basis of periodic intelligence assessments, the armed forces in the domestic context tend to project their capability needs on the basis of departmental analysis and assessment, or through technology development initiatives undertaken by the country's scientific community. This is not to say that such exercises have not been undertaken but their findings and recommendations need to be synthesised to produce a document which clearly and comprehensively outlines the country's military capability needs in the medium to long term. This planning will have to be multi-disciplinary and iterative in order to correctly balance affordability with the capability levels required. While affordability has definitely improved in recent years, but the timely deliverability of material needs still remains a problem. Having relied on arms imports in the past, the country is now seen to be exploring several ways and means to indigenise the production of critical defence technologies either by way of strengthening the ordinance factories and public sector undertakings or entering into public private partnerships. There are two schools of thought on India's future capability development, one which supports indigenisation and the other that strongly backs import substitution till such time internal production capacities are developed. In this regard, the Kelkar Committee in 2005 made a number of important recommendations with regard to self-reliance in defence industrial production.

Defence research and development: Readiness of the armed forces is intrinsically related to the country's capacity to deliver the material wherewithal indigenously or through imports. The material needs of the military can be seen at two levels: war fighting equipment, and the consumables including essential support services. In terms of critical war fighting equipment the country relies heavily on import of items such as ships, aircraft, tanks, guns and radars etc. The weapon systems produced indigenously are low end items such as rifles, light machine guns, short range surveillance devices, select communication equipment and such like items. Even in terms of consumables, the armed forces are dependent on ex-import sources for supply of certain categories of ammunition, rockets

and missiles. At yet another level, the DRDO which has been the torch bearer of defence research and technology in the country has been responsible for identifying critical technologies, and working out of the modalities for technology development.²³⁵

Unfortunately their performance has been less than satisfactory. While they have displayed their technological expertise in the development of long range missile systems, their real challenge lies in the development of advance weapon platforms and systems especially in the field of aeronautics, armaments and combat engineering, electronics, materials and combat related life sciences. And if home grown technology is to be the basis of India's military preparedness in the medium to long term, then the role and accountability of DRDO in achieving the same assumes importance. Achieving self reliance in the field of capability development is also a function of research and development. Importantly, creating self reliance should not be the exclusive domain of a particular agency, but spread over other public and private sector players to promote competition and deliverability of readiness needs. Several parallel channels of technology development will have to be pursued to ensure timely fielding of future military technologies. The academia, fundamental research laboratories and private industry will have an important role to play. As the public-private partnership model gradually evolves within the country, there could be greater offloading of military research and development initiatives to such defence capability development consortiums.

Defence production: At yet another level, the defence production units too need to be made responsive to the military's preparedness needs of the country. This aspect needs to be seen at three levels.

- First, the ordinance factories that supply much of the military stores suffer from weak in-house research and development, production delays and quality compliance related issues, and

²³⁵ Nabinita R. Krishnan, 'Critical Defence Technologies and National Security: The DRDO Perspective', *Journal of Defence Studies*, Vol. 3, No. 3, New Delhi, July 2009.

this need to be corrected.²³⁶ Competition alone can make these ordinance factories competent and accountable for the timely delivery of military's combat readiness needs.

- Second, the defence public sector undertakings will have to diversify the range and depth of defence production either indigenously or in partnership with the private sector both at home or abroad.
- And third, these production agencies could even resort to outsourcing for delivery of select sub-systems or their integration where immediate operational readiness is a critical issue.²³⁷

In other words, a more autonomous yet accountable defence production agency both in the category of ordinance factories and defence public sector undertakings will be essential to deliver the desired material readiness levels in the future. Opening up to the private sector will have to form an important component of this change. Simplistically speaking the shifting of emphasis from production technology to design technology, greater participation of the private sector, enhancement in responsiveness of the defence public sector enterprises, encouragement to joint design and development ventures, and a viable strategy to export arms to countries with common strategic interest could be a means of improving the readiness of the armed forces. One expert argues that India needs to adopt a twin strategy with regard to ensuring readiness of war fighting equipment and material.²³⁸ First is the issue of scouting, identifying and pursuing opportunities in terms of joint development, production and marketing partnership for military technology and support services. Fostering strategic relationships with a wide range of countries and global defence industry players

²³⁶ N. Neihisal, 'Outsourcing and Vendor Development in the Indian Ordinance Factories', *Journal of Defence Studies*, Vol. 3, No. 3, New Delhi, July 2009, pp. 75.

²³⁷ Ibid, pp. 84.

²³⁸ Deba. R. Mohanty, *Arming the Indian Arsenal: Challenges and Policy Choices* (New Delhi: Rupa and Co, 2009), pp. 159-163.

might help achieve this goal. And second, that the domestic defence industry in the public sector should be subjected to an institutional overhaul to ensure a better product range, capacity and quality.

Defence infrastructure: Strategic infrastructure in terms of road, rail and air networks is critical for timely mobilisation and deployment of the military components in times of crises. The issue becomes even more critical when these elements are lacking in density and capacity in the border areas or the distant island territories. Consequently, this limited availability of rail and road infrastructure in the forward areas constrains the inter-theatre mobility of the field forces. In certain areas, and specifically due to the vagaries of climate and terrain, it becomes even more difficult to deploy troops and resources due to lack of forward air bases and helipads. Infrastructural development, which is largely a non-military exercise across the country, is singularly important for ensuring mobilisation related readiness of the armed forces. Military mobilisation is more a function of national infrastructural capacities in terms of rail, road and airports, and their gross handling capacities, rather than military transportation capacities alone. It therefore becomes important to take military imperatives into account while undertaking large scale infrastructural developmental projects at the national level. This, unfortunately, is not the case, which is evident from the fact that despite six decades of independence, the country still lacks in adequate road, rail and communication infrastructure along the border districts. India needs sufficient infrastructural capacities both in the continental and maritime context in order to ensure maintenance of appropriate military readiness levels to meet unforeseen contingencies in the future.

Managing the 3Ms

Effective management of the 3Ms alone can ensure the deliverability of military readiness - both operational and structural - in the Indian armed forces. A few issues of importance are as follows:

- The need to include the study of military readiness as an important component of strategic and military studies in the country. Consequently there will be a need to incorporate the subject matter expertise in the training curriculum of the

three services, and other military courses. A theoretical foundation based on available literature in the open domain could be the basis for the initiation of middle and senior level military officers into the subject matter in the interim.

- There is a case to train select military officers in the readiness practices commonly pursued by militaries in the West. The following chapter deals with the significant advances made by the Western militaries in the theory and practise of military readiness. This overseas training could facilitate better management of money, manpower and material for achieving the desired military readiness levels.
- The need to create appropriate civilian and military structures to measure and oversee the readiness levels of the several components of the armed forces. This would entail defining the readiness standards, the metrics for measurement of the readiness standards, and the mechanisms to measure and report the readiness levels attained. Chapter 11 discusses some of these standards and oversight structures at the apex and departmental level.
- The military readiness measurement and reporting structures so created should become the principal agencies that ultimately testify to the designated legislative bodies about the operational or the structural health of the armed forces on a periodic basis. Most importantly, the Lok Sabha standing committee on defence and the various departments of the ministry of defence and service headquarters would stand to benefit by the creation of such agencies or structures.

The foregoing discussion establishes the importance of money, manpower and material in the delivery of military readiness. Each factor plays a crucial role in the operational and structural readiness of the armed forces but more importantly in concert with each other. However there is often a tendency to evaluate them in isolation and draw conclusions that might not be holistic and appropriate for addressing readiness deficiencies. Money ensures quality manpower and material in required numbers, and hence its optimum utilisation becomes extremely important. Budgetary support ranging between

two and a half to three per cent of GDP for over a decade or so should put the modernisation of the Indian armed forces on track. Manpower is a function of aptitude, skills, and motivation, and ready availability. The problem areas are clearly identifiable and largely pertain to the staffing short falls in the officer corps, and across the board technological skills of the rank and file. Their technological competence will have to be increasingly upgraded through military training and organisational education initiatives, as more and more advanced weapon systems and war fighting platforms are inducted into the armed forces. More importantly, the advent of several disruptive, cyber and electronic warfare technologies places greater operational emphasis on the efficacy of combat units and formations. This might in due course even necessitate the integration of civilian expertise. Material or the ready availability of war fighting equipment and platforms is important, as are military consumables in terms of fuel, oil, lubricants, ammunition, missiles, spare parts, assemblies and support services to fight short and swift wars or even prolonged sub-conventional deployments. The provision of military wherewithal is an area of major concern as repeated establishment level reviews and departmental initiatives have so been unsuccessful in addressing this problem. There is therefore an urgent need to pay attention to the deficiencies in defence research, development, production and acquisition.



Part-IV

Major Lessons and Recommendations



11

Major Lessons

India's prime national security concerns since independence have been its territorial integrity, social and economic well being, and myriad internal security threats. Securing these national interests necessitates protecting the country against a wide range of external and internal threats. The Indian armed forces have met these challenges with extreme professionalism in the past, and ensured that the core values and interests are indeed preserved. India's rising international clout and stature will make increasing demands on the country's armed forces in times to come, and they will need to anticipate these challenges, and prepare themselves to tackle a range of armed conflicts and confrontations. In this context, India's resolve to maintain high levels of defence preparedness has become more apparent in recent years. The country has embarked upon a major military modernisation programme for increasing the size and capability of its armed forces. The scale of defence funding reflects both its desire to make up for lost time and the changing security environment. Currently with the tenth largest military budget in the world, it is predicted that the Indian defence forces would spend nearly \$100 billion on military hardware in the current five year plan (2007-12); and another \$120 billion during the next plan period (2012-2017). The long term defence acquisition plan (Long Term Integrated Procurement Plan or LTIPP) include substantial procurement of land, air and naval systems with a view to field highly mobile, lethal, and networked defence forces in the future. In the FY 2010-11 alone, \$32.03 billion has been earmarked for national defence, and out of this, nearly \$13.04 billion is proposed to be spent on capital acquisitions. This figure is expected to rise to \$19.20 billion by 2015.

Qualitative changes currently underway in the field of military organisations, technologies, doctrines, operational strategies and institutional culture could significantly transform the country's war fighting capabilities over the next decade or so. The emphasis on

fighting “anywhere, anytime and under any conditions” by the prime minister during the Combined Commanders Conference held in October 2009 is notable since India’s readiness concerns have never been so forcefully articulated in the past. Our past conventional military conflicts and sub-conventional engagement have brought into focus several deficiencies in doctrinal and capability terms, and these have been a subject of intense public debate. This debate however does not full take into account the limits and limitations of India’s defence policy, doctrines and strategy, funding and structures, capabilities and capacities, and issues of logistical sustainability. The domestic perceptions on India’s military readiness sometimes suffer from ill informed reporting in the media. The scrutiny of country’s defence preparedness undertaken by the Lok Sabha Standing Committee on Defence (SCD) too lacks clear focus and objectivity. The Annual Defence Reports released by the Ministry of Defence (MoD) too present a generic picture and do not throw sufficient light on the country’s war fighting capabilities and their battle worthiness on yearly basis. At yet another level, the three services also look at readiness in a disaggregated form, and the ability to evolve an integrated picture on country’s preparedness for crisis or conflict is rather limited. Furthermore, in the absence of a national security strategy in the country, there are serious gaps in the conceptualisation and articulation of military readiness among the national leadership, and defence policy makers and practitioners.

Given the nature of emerging threats and challenges, some of which are clearly not discernable at this stage, there is a need to build sufficient theoretical learning among the Indian defence policy makers and practitioners with respect to contextualising the problem of military readiness both at the macro and micro level. It is argued that the construct of “defence preparedness” which is commonly used in the Indian context is dated because it reflects an attitude of “self satisfaction” (i.e. of fighting with forces and material that is at the disposal of the armed forces), while there is a need to maintain “ready and relevant” military components to face unforeseen challenges and threats in the twenty-first century. This monograph has attempted to highlight the relevance and importance of “military readiness” vis-à-vis “defence preparedness” to facilitate sound policy and decision making on readiness related matters in the Indian armed

forces. This chapter summarises the major findings of the research and these are discussed at three levels: the problem of concept and expression among Indian policy makers and practitioners, India's readiness concerns and limitations, and the need for an overarching readiness strategy.

Concept and Expression

A clear theoretical understanding on the construct of “military readiness” among India's defence policy makers and practitioners is a must to appreciate the country's military readiness concerns and develop a sound readiness strategy in the short to medium term. These have been discussed in detail under Chapters 2, 3 and 4 and three aspects assume importance here.

- First, the construct of “military readiness” differs in theory and practice from the commonly articulated concepts of “military capability” and “military effectiveness”. The fine argument being that any “military capability” has to be kept “ready and relevant” to be “effective” in battle. While this is well theorised and understood among major militaries and armies in the West, there is often a tendency to lump “military readiness” with “military capability” in the domestic context. This is clearly evident from the short survey undertaken by the author on the definition and understanding on military readiness among India's defence policy makers and practitioners. India's policy makers and practitioners need to draw greater clarity on the theory and practise of military readiness in order to formulate and prioritise its capability needs for the future.
- Second, the theory and practise of India's military readiness can be examined at three inter-related levels: the concept, contending approaches, and constraints in its articulation. The concept can be expressed in several different ways. But what is important is to understand it in the context of the “demand”, “availability” and “shortfall” in the levels of readiness at any given point of time or situation. The ability of a state to convert available raw resources in terms of money, manpower and material into military capability to meet

the demands of a crisis situation explains the concept of readiness. Any shortfall in capability will be indicative of the lack of readiness on part of a military component tasked in a crisis situation. At yet another level, it can also be expressed as operational or structural readiness. Operational readiness will imply immediate delivery of military capability as might be the case with regard to myriad internal security situations or a grave provocation from an adversary, while structural readiness might entail preparing military capability for crisis situations that might occur in the medium to long term.

- Third, the militaries in the West have invested in a great deal of expertise and effort at the legislative, bureaucratic and operational level to ensure that the country's military readiness needs are actually met. For instance, the HASC, GAO, CBO, DoD and QDR reports, SORTS and C-ratings in case of United States, and the MoD and HAO reports, RO-R11 and B1-B3 ratings in the case of United Kingdom reflect the theoretical and procedural rigour in their case. China too, and true to its strategic acumen, explains the concept of military readiness through phrases such as mechanisation and informational-isation. In the Indian context, this is clearly lacking and calls for attention towards the standards and measures to analyse the military readiness levels. To begin with, the Lok Sabha Standing Committee on Defence could invest in appropriate research and analytical capacities that enable them to examine issues of military readiness with far greater purpose and clarity. This would assist the Indian defence establishment in enabling a top down understanding of our readiness needs and priorities. In due course, the three services too should define the metrics, standards and mechanisms to address the readiness related issues in Indian armed forces.

Military Readiness Concerns

The prevailing geo-strategic environment, the critical security challenges and threats that the Indian faces, the imperatives and implications of future military conflict or confrontation are some of the concerns that will define the military readiness needs of the

future. These have been discussed in detail under Chapters 5, 6 and 7 and three aspects are relevant.

- First, India is faced with a wide range of conventional and sub-conventional military threats and challenges – some of which are not clearly discernable or foreseeable – which in turn places greater demand on the defence planners and practitioners to deliver operational readiness in times of crises. Military readiness is all about recognising these myriad security challenges and threats so that the available national resources in terms of money, manpower and material could be optimally utilised during peace time to fashion and deliver the military instruments of force, as and when required.
- Second, the existing gaps and deficiencies observed in the doctrinal and capability development of the Indian armed forces severely impact the deliverability of the country's military preparedness in times of crises. These discrepancies in India's military readiness can be explained at three levels. One, there seems to be a disconnection between the doctrinal aspirations of each service, and the country's ability to individually or collectively deliver the military capability needed to operationalise these doctrines. The aspect of capability development particularly stands out in the case of the army and the air force, while the navy has been somewhat better prepared in recent years. Two, the envisaged doctrines must nest within the overall politico-military framework of the country. An overreach in doctrinal aspirations might place an undesirable demand on the country's scarce resources to produce the desired military capabilities. This does not imply that the current articulations are incongruous, but that these need to be harmonised among the three services. And three, the inability of the national security structures to iron out the readiness inconsistencies in order to field a more "relevant" military in the future. A new vision needs to be articulated, which harmonises both the doctrinal articulation and capability development in tune with the larger national interests and aspirations.

- Third, there are several limitations and hurdles that impinge upon the readiness levels of the Indian armed forces. These have been examined at three levels: the lacunae in national security policy and planning structures; the systemic and procedural hurdles in capability development; and the limitations of organisational culture and education. The particular aspect of capability development demand a substantial change in the role and functioning of the defence finance department, the scientific community, the production agencies, the bureaucracy and the military. The defence acquisition plans need to be articulated and directed to enable wider participation of public, private and multi-national enterprises. In terms of institutional culture, the disconnection in civil-military relations, the inability to undertake comprehensive organisational reforms and lack of professional military education assume importance. These lacunae combine to produce an effect that is not conducive towards enhancing the operational preparedness levels and efficacy of the Indian armed forces in battle.

Military Readiness Strategy

Given the myriad threats and challenges that India faces, there is a need to formulate a comprehensive military readiness strategy to meet the unforeseen operational contingencies of today and tomorrow. These aspects have been discussed in detail under Chapters 8, 9 and 10 and again three issues assume importance.

- First, there is need to examine the problem of shaping India's hard power in the twenty first century. India's capacity to master the creation, deployment and use of military instruments despite six decades of independence is still not quite certain at this point in time. It will depend on how the country's leadership both political and military manages to reconcile between the strategic opportunities, threats and challenges that have been identified in the regional and global context. India still remains a relatively inward looking, state that has focused more on "satisficing" hard power rather than "maximizing" it. In other words, the innate reluctance to use force to secure decisive outcomes might consign India to be

content with remaining a middle power for some time to come. And if this is to be corrected, then the defence “transformational strategies” that are often spoken about will have to be vigorously pursued for building a strong Indian military capability.

- Second, there is therefore a need to formulating India's military readiness strategy in the years ahead. India's economic rise and access to technology seems to be changing perspectives within the country, and the increased resource allocation to military modernisation can be usefully utilised towards the growth of the Indian armed forces. However a technocratic or an acquisition oriented or a manpower intensive approach alone might not deliver the military readiness needs of the country. There is an express need to strategise India's military readiness concerns in the frame work of possible security threats and challenges (readiness for what?), the military capabilities required to meet these threats and challenges (readiness of what?) and the likely time frames by which these capabilities are required (readiness for when?). This three tiered approach alone can help India decide on the nature and optimal levels of military readiness both operational and structural required during peace time and war. Simplistically speaking India needs some form of “operational readiness” when it comes to dealing with Pakistan in the immediate future, and “structural readiness” to ward off the long term military threats and challenges from China.
- Third, there will be a need to synchronise the military readiness strategy in terms of the money, manpower and material (3Ms) that is made available, and whether this military readiness building approach has to be linear or cyclical in the medium to long term. Each factor plays a crucial role in the operational and structural readiness of the armed forces but more importantly in concert with each other. However there is often a tendency to evaluate them in isolation and draw conclusions that might not be holistic and appropriate for addressing readiness deficiencies. Effective management of the 3Ms

alone can ensure the deliverability of military readiness both operational and structural in the Indian armed forces. A few issues importance here. First, is the need to introduce the study of military readiness as an important component of strategic and military studies within the country. Second, there is a case to train select military officers in the readiness practices commonly pursued by militaries in the West. This training could facilitate better management of money, manpower and material for achieving the desired military readiness levels. Third, there will be a need to create appropriate civilian and military structures to measure and oversee the readiness levels of the several components of the armed forces. Fourth, the military readiness measurement and reporting structures so created should become the principal agencies that ultimately testify to the designated legislative bodies about the operational or the structural health of the armed forces on a periodic basis. Most importantly, the Lok Sabha Standing Committee on Defence and the various departments of the Ministry of Defence and Service Headquarters would stand benefited by the creation of such agencies or structures.

The monograph concludes that the process of assessing and reporting military readiness in the Indian armed forces is still in its infancy because of lack of metrics, measurement standards, and institutional oversight. India's exaggerated reliance on achieving readiness through defence funding and acquisitions inhibits us from addressing these concerns objectively. Consequently, the military readiness needs in the country need to be viewed through the overlapping frames of national security, foreign and defence policy, doctrines and strategies, funding and technology, structures and capability, training and culture. A comprehensive contextual understanding on the subject matter therefore assumes significance. There is also a need to establish a deeper causality between the several factors that define India's military readiness concerns and strategy. Simplistically Indian armed forces need to maintain a certain level of "operational" readiness to guard against likely Pakistani misadventures, while the focus in the north against China, and the Indian Ocean Region (IOR), will have to be more "structural" and

“long term” in nature. Clearly India’s strategic dilemma lies in balancing the “structural” and the “operational” aspects of readiness over time. Uneven efficacy of the paramilitary forces and the police services in dealing with internal security threats too will erode the military’s capacity to deal with myriad conventional, sub-conventional and non-traditional challenges in the future.

12

Recommendations

The first priority of India's national security apparatus should be to ensure that the country's armed forces are ready to fight today's wars and in the future. Creating optimal war fighting capabilities may take decades of hard work but it is an even greater challenge to preserve the "readiness" of the military organisations, structures and capabilities so created. The approach towards preserving the country's readiness levels simply cannot be to deal with defence preparedness issues as they appear, but to anticipate them well in advance and prevent them from occurring through a readiness warning system. The problem of defining a credible readiness warning system lies in our inability to comprehensively define what military readiness is, and what it is not. The broad or narrow definitions of military readiness are well known, and these need to be guarded against in the Indian context. As the expectations from the Indian armed forces are increasingly articulated with greater political clarity and purpose, there will be a need to define the metrics, measurement mechanisms and management processes in our context.

This chapter explicates the policy recommendations with regard to the institution of structures and measures to compile, analyse and report the country's military readiness levels. These will have to be undertaken at three levels:

- **Defining the Metrics:** Clear and concise standards need to be outlined to specify the levels of operational or structural readiness that our armed forces must be able to attain in the short, medium and long term.
- **Fixing the Readiness Standards:** Reliable readiness measurement techniques to assess whether the current and future force structures are able to meet desired operational standards over diverse military environments.

- **Framing the Readiness Mechanisms:** Responsive management structures to ensure that military readiness receives appropriate attention within the policy making circles, and the corrective and resource allocation processes.

Metrics

It can be argued that determining military readiness standards is perhaps easy in our context. Pakistan and China being our principal adversaries, the broad standards should be determined by the ability of our forces to execute the military strategies as envisaged for each front. Our strategic interests in the Indian Ocean region should dictate our maritime military readiness needs. And the conflicts in the internal context are also changing rapidly, and therefore this adds another dimension. The Indian armed forces have to be increasingly prepared to standby in support of the central paramilitary forces and the police services to stabilise deteriorating internal security situations, or public unrest. The broad readiness standards will therefore have to be determined from the wide range of internal and external threats that may have to be simultaneously handled. The threat scenarios of “one” or “one and a half” fronts, “two” or “two and a half” fronts could even become “three and half” in light of the inimical or extra-regional interests in the Indian Ocean region. Having identified the broad scope of India’s military engagement and the capability needs, there would be a need to develop suitable readiness metrics to determine whether or not the military forces are capable of meeting the operational standards.

Standards

We often measure readiness by looking at resource inputs alone - such as the money allocated and spent; equipment identified, contracted and delivered; and personnel recruited, inducted and superannuated. The readiness dilemma here is that these measure only the factors that contribute to readiness and do not analyse the satisfaction levels at the point of delivery – or outcomes. Some times the metrics focuses only on the frontline units and field formations but not on the rest of the military force as carefully. And since commanders are more concerned with military readiness at the cutting edge or the operational level, the structural readiness

tends to be ignored. The readiness standards therefore need to be framed at three broad levels:

- **Unit Readiness:** There would be a need to specify performance standards for different types of military units and develop systemic means for estimating how long units take to achieve different levels of operational preparedness. It would therefore be essential for all combat and combat support units including logistic units to report the resources they need to maintain peacetime readiness levels, and the training required to perform the operational role and tasks for which they are organised and designed. Simply put, the manpower, equipment, training and logistical support would collectively define the unit readiness level.

- **Force Readiness:** This would be a collective measure of the individual and unit level training capacities, availability of manpower, equipment and warlike stores, and time specified mobilisation and deployment of the designated force for operations. Such assessments will be specific to the envisaged operational scenarios and distinguished by the theatre of operations, scale and warning period. Today, force readiness is not only required at the single

Readiness Attributes
<p>Unit Readiness Manpower, equipment, supplies, training, and ability to meet desired operational activity levels. Unit readiness reports should specify the resources at hand and those needed to make it fit for operations.</p>
<p>Force Readiness Extent and scope of mobilisation, induction capacities, training, logistics and deployment objectives, priorities and timings. In fact, force readiness entails measurement of mobilisation, deployment and distribution (in terms of logistics) analysis.</p>
<p>Sustainability Function of unit dependencies, rates of attrition, loss and consumption, and surge capacities. This would define for how long operational activity levels can be supported.</p>

service level but also in the case of the expanding range of joint military operations. This would involve finding a common operational and logistical footprint between the three services to meet the desired readiness objectives.

- **Sustainability:** There would be a need to continuously assess the availability of the war fighting material, the ability of the armed forces to move additional personnel and resources, and the economic and industrial capacity to induce a surge in defence production. This would also involve identifying the unit and formation activity levels, the consumption and attrition rates, the levels of organisational and operational uncertainty, and the consistency and the adequacy of support resources.

Analytical confusion and political gamesmanship can undermine both the expression and measurement of military readiness.²³⁹ Even when the establishment wants to make an honest attempt, the sheer vastness of technical detail and selective compilation by competing interest groups may result in flawed assessments. Underlying this confusion could be the failure to establish clear terms of reference and standards for measuring readiness. Several reasons have been ascribed for this inadequacy. These are the slow evolution of the concept vis-à-vis other military planning aspects; difficulty in formulating credible measurement models; and feeding of inaccurate or unreliable data. Experts argue that shifty standards and dubious data could make people sceptical about the revealed readiness levels.²⁴⁰ Above all, readiness needs to be watched through the twin

²³⁹ Betts, no. 10, p. 88.

²⁴⁰ Some important dichotomies raised by Betts in his book are summarised:

- **Levels of Examination:** The complexity of the problem lays in the fact that readiness needs to be assessed at three levels i.e. the individual soldier, the weapon systems and the fighting formations. This complex interdependence is rather difficult to comprehend. It is easiest for individual soldiers, a bit more complex for weapon systems and perhaps the most difficult for fighting formations. Often there could be several interests to overstate the readiness levels; a partially capable force can be made to look fully capable or vice versa in absence of a clear metrics for measuring the operational readiness levels.
- **Complexity in Expression:** A readiness framework that has been highly popular in the US has been the system of C and S ratings, where C stands for 'condition' and S for

prisms of “inputs” and “outputs” for signs for decreased readiness. It could sometimes be adversely affected by increase in peacetime operational tempos necessitated either by routine engagements or crises.

Mechanisms

First of all, there is little doubt that preserving readiness has to be the cornerstone of any national defence strategy. The creation of management structures is important to ensure that preparedness concerns permeate all levels of decision-making. To ensure congruence at the several decision making levels, a readiness management mechanism is recommended. This could be a three tiered structure as follows:

Defence Readiness Council: This council could be charged with the coordination within the key ministries and agencies that influence readiness related decisions at the highest level. The council chaired

‘sustainability’ of the fighting formation or a unit. The issue becomes all the more complex when force readiness is explained as aggregation of individual unit ratings. Force readiness also gets linked to the issue of the proficiency in the command and control of manoeuvre, fire support and logistical elements. There could always be a possibility that the overall rating could be altered by mere one or two bad unit ratings. In an era of integrated operations, the problem of assessing readiness of joint operating forces could become equally complex and mind-boggling.

- **Usage of Data:** Next is the issue of usage of data which undermines readiness assessments at various levels. Sometimes the same data set can be employed to explain improvement or decline in readiness levels by competing staff within the same organisation. The context, presentation and manipulation of readiness data assumes importance, and if ignored, may lead to incorrect or incomplete decisions. In an attempt to improve the intelligibility of data, there could be a tendency for over simplification. Sometimes selectivity in usage of data can be used to draw valid conclusions, but not when it leads to distorted conclusions. Manipulating information is a practice in politics, especially to justify policy. Sometimes facts tend to bubble through the chain of command in stark contradiction for reasons of the sheer volume of data to be mined, constraints of time and fatigue in the reporting system.
- **Compilation and Aggregation:** Another problem area is the aggregation of the readiness data and in particular its consistency and comparability. Rapid changes in technology and command and support structures can impede compilation of readiness data and therefore the readiness assessments and decision-making. Compilation of readiness data can be troublesome between the services, within the services and therefore it could fluctuate widely in absence of a common measurement framework.

by the RM and including the service chiefs; technology developers, production and procurement agencies; and infrastructure and transportation enablers from ministries of railways, civil aviation, surface transport, petroleum and oil, telecommunications, shipping, food and supplies, etc would periodically

Decision Making at Council Level	
Strategic Guidance	National Security Objectives Funding and resourcing Mobilisation decisions
MoD Level	Defence funding priorities Defence research and production Defence acquisitions
COSC	Military strategies Force and resource allocation Feasibility of joint plans

review the readiness needs and concerns at the strategic level. The council would consider recommendations made by the Defence Readiness Committee to link the near term operational needs with long term readiness programmes (i.e., structural). The aim of constituting this council being that, critical readiness concerns are brought to notice at a sufficiently high level to keep the political leadership apprised of readiness deficiencies on a periodic basis. The readiness council will have to be distinct from the defence acquisition council. The council secretariat headed by a three star military officer and staffed by a mix of civilian and military specialists could become the focal point for providing readiness advice to the government.

Defence Readiness Committee: This committee constituted by HQ IDS could be charged with developing the readiness metrics in consultation with the three services. This will be the forum for raising, discussing, evaluating and recommending solutions on key readiness issues raised by the environment. It would also focus on developing readiness indicators and especially those which provide warnings on future readiness problems and alerting the Defence Readiness Council to

Decision Making at Committee Level	
HQ IDS	Integrated planning. Joint doctrines and concepts. Joint training and deployment.

critical readiness concerns. The committee would be organised and staffed to address issues of manpower, material and strategic mobility needs. The committee could be an adjunct of the directorate dealing with long term integrated perspective plans (LTIPP). The Defence Readiness Committee would in turn work also with the readiness directorates of the respective services, and various defence related research, production and procurement agencies.

Defence Readiness Sub-committee: This sub-committee will have to be constituted by each

service, and include the concerned ministries and agencies, that contribute to the operational health of the armed forces. Ideally speaking the operational directorates (or equivalent departments) of the respective headquarters would perform this function to maintain readiness oversight over the service providers. The standards achieved in each service could be evaluated at this level and based on the assessments made requisite course corrections could be

Decision Making at Sub-committee Level	
Service HQ	Doctrines and force development Acquisitions and equipping Logistics and Sustenance Feasibility of operational plans Mobilisation sequencing
Theatre commands	Operational plans Manpower status Equipment and infrastructure Spares, supplies and maintenance Training and proficiencies Mobilisation capacities

applied. Currently the process of assessing readiness standards is rather fragmented and divided due to multiple channels of reporting within a service. Separately the military organisations designed to collate, compile and analyse preparedness data may lack the requisite expertise, capacity and analytical skills, which in turn could affect the preparedness of the Indian armed forces. It is accepted that a fair amount of military understanding already exists on the issue amongst the three services, and that several readiness assessment and reporting mechanisms must already be in place. However these being departmental in outlook cannot address the country's readiness concerns at the highest level. And also, it may not be a good idea to

simply survey readiness through water tight compartments, when it involves a great deal of cost and effort to the nation. India's military readiness needs to be viewed jointly at each level of operational activity, and aggregated along the hierarchical chain to enable realistic assessments and course correction. The suggested readiness framework would not only accord greater clarity to strategic thinking in India, but also explain how far the nation's military postures can address our security concerns. By creating readiness oversight at these three levels, it would be possible to view the readiness of the Indian armed forces through a single prism.

More importantly, it will be possible to communicate readiness concerns to the highest political level. And, the framework could also enable a common understanding on military readiness issues at the legislative, executive and departmental levels. The Parliamentary Standing Committee on Defence, the Comptroller Audit General (CAG) and other statutory bodies concerned with national security could immensely benefit from the assessments made at several levels by the three tiered readiness measurement framework. It would call for creating sufficient multi-disciplinary skills and staff capacities to undertake readiness related analytics and decision making. Besides, it would be important to absorb some of the procedures and practices prevalent in Western militaries in order to create a workable and responsive framework. The British readiness assessment model (based on RO to R11 and B1 to B3 status) could perhaps be considered for replication, because of its simplicity and efficacy, in the Indian context.

Creating war fighting capacities takes years of hard work but an even bigger challenge is to preserve existing levels of readiness. The approach of preserving readiness therefore cannot be to deal with defence preparedness issues as they emerge, but to anticipate and prevent them from occurring through a readiness warning system. In the Indian context, the problem of defining a readiness warning system lies in our inability to comprehensively define what readiness is, and not what needs to be done. Firstly, clear and concise standards are required to be articulated to specify the levels of readiness that our armed forces must be able to attain. Second, the need to ascertain if the desired readiness levels are being achieved. And third, the creation of structures that accord appropriate oversight on the readiness policy, measurements, and course corrections. A hierarchical structure is essential to ensure that our military readiness concerns are addressed at all levels. Collectively these levels could collate, compile and analyse the preparedness data in terms of manpower, material and monetary allocations in order to address the operational deficiencies and concerns. Above all, this could provide the much needed basis for oversight at the executive level and legislative scrutiny. The future will always be uncertain and unpredictable. However much in contrast to this reality, armed conflict is often seen by policy makers and practitioners in a linear fashion – peace keeping, peace enforcement, aid to civil authorities on occurrence of famines, disasters, catastrophes and pandemics, counterinsurgencies, counter terrorism operations and conventional military operations. Since the neighbourhood is increasingly witnessing hybridised security situations, there is a need to recognise the emerging nature of military conflict. It is therefore pertinent that the Indian armed forces offer relevant and precise choices for application of force across this expanded spectrum of armed conflict and natural or man-made catastrophes. This can only happen, if the use of force in response to a political decision is planned and executed through the prism of actual readiness of the armed forces.

And if future engagements were to increasingly become conflicts “among the people, about the people, for the people”, there would be an implicit need to retain sufficient organisational flexibility to re-balance the military structures, capabilities and readiness levels to deal with uncertainties of future. To achieve these levels of readiness, the build up of military capabilities will have to be both foreign and security policy led, and resource informed. The resource led focus of filling in pot holes in our immediate pathway to build war fighting capabilities will have to become less relevant in the future.

Select Bibliography

Sandler, Todd, Hartley, Keith (eds.), *Handbook of Defense Economics: Defence in a Globalized World*, Amsterdam, Elsevier, 2007.

National Defense Research Institute, Final report to the Secretary of Defense, *Assessing the Structure and Mix of Future Active and Reserve Forces*, Rand Corporation, Santa Monica, 1992.

Lippiatt, Thomas F Polich, Michael J Sortor, Ronald E Dey, Patricia K., *Mobilization and Train-up Times for Army Reserve Component Support Units*, Rand Corporation, Santa Monica, 1992.

Brauner, Marygail Thie, Harry Brown, Roger, *Assessing the Structure and Mix of Future Active and Reserve Forces: Effectiveness of Total Force Policy during the Persian Gulf Conflict*, Rand Corporation, Santa Monica, 1992.

Rich, Michael Cohen, I K Pyles, R A., *Recent Progress in Assessing the Readiness and Sustainability of Combat Forces*, Rand Corporation, Santa Monica, 1987.

David E Dahlman, Carl J. Thaler, *Assessing Unit Readiness: Case Study of an Air Force Mobility Wing*, Rand Corporation, Santa Monica, 2002.

Orvis, Bruce R., *Deployability in Peacetime*, Rand Corporation, Santa Monica, 2002.

Dahlman David E., Carl J Thaler, *Assessing Unit Readiness: Case Study of an Air Force Fighter Wing*, Rand Corporation, Santa Monica, 2000.

Theodore W Builder, Carl H Karasik, *Organizing, Training, and Equipping the Air Force for Crises and Lesser Conflicts*, Rand Corporation, Santa Monica, 1995.

Peters, John E Deshong, Howard, *Out of Area or Out of Reach: European Military Support for Operations in Southwest Asia*, Rand Corporation, Santa Monica, 1995.

Tellis, Ashley J Bially, Janice Layne, Christopher McPherson, Melissa, *Measuring National Power in The Post-industrial Age*, Rand Corporation, Santa Monica, 2000.

Taw, Jennifer Morrison Persselin, David Leed, Maren, *Meeting Peace Operations' Requirements While Maintaining MTW Readiness*, Rand Corporation, Santa Monica, 1998.

Pirnie, Bruce R Francisco, Corazon M., *Assessing Requirements for Peacekeeping, Humanitarian Assistance, and Disaster Relief*, Rand Corporation, Santa Monica, 1998.

Sortor, Ronald E Lippiatt, Thomas F Polich, J Michael Crowley, James C., *Training Readiness in the Army Reserve Components*, Rand Corporation, Santa Monica, 1994.

Shukiar, Herbert J., *Readiness Enhancement Model: A Personnel Inventory Projection Model of the Army's Reserve Components*, Rand Corporation, Santa Monica, 1996.

Vick, Alan Orletsky, David T Shulsky, Abram N Stillion, John., *Preparing the US Air Force for Military Operations Other Than War*, Rand Corporation, Santa Monica, 1997.

Chow, Brian G., *Peacetime Tempo of Air Mobility Operations: Meeting Demand Maintaining Readiness*, Rand Corporation, Santa Monica, 2003.

Hosek, James Totten, Mark., *Does Perstempo Hurt Reenlistment: The Effect of Long or Hostile Perstempo on Reenlistment*, Rand Corporation, Santa Monica, 1998.

Keating, Edward G Camm, Frank, *How Should the US Air Force Depot Maintenance Activity Group be Funded? Insights From Expenditure and Flying Hour Data*, Rand Corporation, Santa Monica, 2002.

Peltz, Eric Robbins, Marc Boren, Patricia Wolff, Melvin, *Diagnosing the Army's Equipment Readiness: The Equipment Downtime Analyzer*, Rand Corporation, Santa Monica, 2002.

Tripp, Robert S Galway, Lionel Killingsworth, Paul S Peltz, Eric., *Supporting Expeditionary Aerospace Forces: An Integrated Strategic Agile*

Combat Support Planning Framework, Rand Corporation, Santa Monica, 1999.

Taylor, William W Moore, S Craig Roll, C Robert, *Air Force Pilot Shortage: A Crisis For Operational Units?* Rand Corporation, Santa Monica, 2000.

Harrell, Margaret C Miller, Laura L., *New Opportunities for Military Women: Effects Upon Readiness, Cohesion and Morale*, Rand Corporation, Santa Monica, 1997.

Ochmanek, David A, *To Find, and Not to Yield: How Advances in Information and Firepower Can Transform Theatre Warfare*, Rand Corporation, Santa Monica, 1998.

Peltz, Eric., *Equipment Sustainment Requirements for the Transforming Army*, Rand Corporation, Santa Monica, 2003.

Peltz, Eric et al., *Effects of Equipment Age on Mission-Critical Failures Rates: A Study of M1 Tanks*, Rand Corporation, Santa Monica, 2004.

Glenn, Russell W. Hartman, Steven L. Gerwehr, Scott, *Urban Combat Service Support Operations: The Shoulders of Atlas*, Rand Corporation, Santa Monica, 2003.

Kitson, Frank, *Directing Operations*, Faber and Faber, London, 1989.

Mackenzie, J J G, Ried, Brian Holden (eds.), *British Army and the Operational Level of War*, Lancer, New Delhi, 1989.

Barnett, Frank R, Tovar, B Hugh, Shultz, Richard H (eds.), *Special Operations in US Strategy*, National Defense University, Washington D C, 1984.

Brown, Thomas, *Models of Strategic Stability*, Southern California Arms control and foreign policy seminar, Los Angeles, 1971.

Cox, David, Legault, Albert (eds.), *UN Rapid Reaction Capabilities: Requirements and Prospects*, Canadian Peacekeeping Press, Clementsport, 1995.

Betts, Richard K., *Military Readiness: Concepts, Choices, Consequences*, The Brookings Institution, Washington DC, 1995.