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Vol. 4, No. 2, Summer 2009 (April-June)

Editor's Note ix

1. **EMPLOYMENT OF AEROSPACE POWER:
REGIONAL IMPERATIVES FOR CHANGE** 1

Air Chief Marshal **Fali Homi Major** PVSM, AVSM, SC, VM ADC, Chief of the Air Staff, IAF, in his Special Address titled **Regional Imperatives for Change in the Employment of Aerospace Power** at the Centre for Air Power Studies, New Delhi, on May 22, 2009, emphasised that we will have to continue to maintain a credible conventional war-fighting capability that remains capable of dominating the conduct of operations. This is absolutely essential, because it is only credible and demonstrable capability which will ensure stability in our region. There is simply no alternative to the maintenance of a strong and capable air force, despite the knowledge that it may rarely be used in its classical role. But he believes that this is the premium we will have to pay. The Air Force, therefore, is faced with an unenviable paradox, where, on the one hand, we cannot afford to let our conventional guard down, while, on the other, we will probably face an increased frequency of sub-conventional conflict situations.

2. **INDIA'S TIBET PROBLEM** 9

India's Tibet Problem has existed from the very beginning when China invaded and occupied it in 1950. Over the decades, it has not been able to

assimilate the Tibetans into the Chinese polity primarily since Chinese institutions and political systems are not geared for allowing space for regional cultures and religions. **Prem Shankar Jha** has argued in his lecture that the disturbances in Tibet last year once again highlight this problem and this is already leading to greater Chinese assertiveness and hard line toward India. Given the outstanding territorial disputes and the broader divergence of interests and grand strategy values of the two rising powers, New Delhi would have to carefully nuance its policies and posture while maintaining sufficient capacity to take care of any adverse changes in China's policies.

3. CHINA'S AIR FORCE IN THE COMING DECADES: TRENDS AND IMPLICATIONS 23

In this seminal essay, Lt. Col. **R. Ghose** argues, based on facts, that the People's Liberation Army Air Force (PLAAF) has made impressive progress towards comprehensive force modernisation, and it may require an additional 10-15 years before the process is complete. Several obstacles stand in the way. The most visible impediments are hardware deficiencies and significant shortfalls in key weapon systems essential in offensive air operations. He believes that development of new operational concepts and doctrine are faced with the PLAAF's lack of recent combat experience though significant changes are underway in the training programmes.

4. FORCE MODERNISATION: PRINCIPLES AND PRACTICE 51

Commodore **S. Sammadar**, IN, believes that no country can become an influential power in regional or global politics unless it manufactures its own armaments in its own arsenal. Force modernisation, he believes, must recognise this important parameter and steps must be taken to energise domestic defence industry through various means. The present era, he believes, is full of opportunities for the

modernisation of India's armed forces that must, together, formulate a plan that seeks specific investments with governmental support for procuring evolutionary systems to meet near term contingencies and also provide for generation-after-next systems that would catapult India into a major manufacturing base for defence products in the long term.

5. HISTORY AND EVOLUTION OF NETWORK-CENTRIC WARFARE 73

The Information Technology Revolution has been impacting strongly on how wars are to be fought in the future. Wing Commander **Sanjay Poduval** argues that the wars of tomorrow will increasingly be fought in cyberspace. Thus, intelligence services will need an increasing proportion of tech-savvy talent to track, target and defend against adversaries' IT capabilities. Since cyber wars will be played out on landscapes of commercial IT, intelligence agencies will need new alliances with the private sector, akin to existing relationships between nation states and will have to confront awkward problems such as performing intelligence preparation of cyber battlefields; assessing the capabilities and intentions of adversaries whose info-weapons and defences are invisible; deciding whether there is any distinction between cyber defence and cyber intelligence; and determining who in the national security establishment should perform functions that straddle the offensive, defensive and intelligence missions of the uniformed Services and intelligence agencies.

6. FOCUSSED AND DYNAMIC RESPONSE LOGISTICS 99

The use of commercial best practices, competitive sourcing and partnering, combined with a decreased in-theatre logistics footprint and infrastructure, reduced inventory and reduced numbers of maintenance personnel are all part of the strategy for focussed and dynamic logistics, as per Group Captain **J.V. Singh**. He believes that

not only would it remove the financial drain of underutilised assets, but a properly constructed and tested ‘focussed’ supply chain should ensure the right war-fighting assets are in the right place at the right time and in the right amount. The Indian Ministry of Defence (MoD) has not stated that they will adopt ‘focussed Logistics’ as such, and will have to implement a number of changes before they will have the capability to support such a system.

7. AIR DOMINANCE: CONCEPT AND PRACTICE 133

Air Marshal **Vinod Patney** concludes that the significance and essentiality of securing aerospace domination are all too obvious. Aerospace domination that must include cyber space may not be readily achieved if the adversaries are well matched. Under these circumstances, the domination will have to be fought for with the aim of securing the highest degree of domination that is feasible commensurate with the military requirements. Like any capability, there are costs involved. There will also be many limitations but aerospace domination is a laudable objective; the degree to which it can be achieved will be a function of the respective hardware, training and planning. A strategy enunciation is the first step.

8. AIR DOMINANCE IN 4TH GENERATION AND IRREGULAR WARFARE 149

There is no doubt about the inescapable requirement for air dominance in conventional warfare at the higher end of the spectrum of warfare. What Air Commodore **Arjun Subramaniam** is concerned about is the absence of adequate debate on the need for air dominance even at the lower end of the spectrum of warfare. Continued focus on building conventional air power assets for high intensity conflict is essential for democracies and large militaries to protect interests, influence geo-politics and retain certain coercive and deterrent capabilities. However, unless these assets are employable and employed across the

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spectrum of warfare and more so in the realm of Information Warfare (IW) or 4th Generation (4G) Warfare, it is going to become increasingly difficult for air forces to cope with the emerging challenges of the 21st century.