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Editor's Note

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1. FINANCING FORCE MODERNISATION

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In his Keynote Address at the 4th Subroto Seminar on Aerospace Power, Shri **Vinod K. Misra**, former Secretary Defence (Finance), emphasised that the essential thrust of our modernisation effort has to involve a distinct superiority over our immediate neighbour and a strong dissuasive capability for the rest. It also has to factor in reasonable strategic capability by way of handling out of area contingencies in sync with our current aspirations as a significant voice in the Asian region and the world. He also reminds us that acquisitions and upgrades of weapons platforms alone would not modernise us adequately and attention would simultaneously have to be devoted to the necessary dynamic reorientation of doctrines, strategy, tactics, operations and training as well.

2. AIRSPACE MANAGEMENT: A SYNERGISED APPROACH

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Wing Commander **Atul Kumar Singh**, VSM in his article argues that air traffic in India has been increasing at a phenomenal pace in recent years. Among the numerous advantages and challenges that this poses in terms of infrastructure and management, that of airspace management stands out and requires a multi-agency synergistic approach. The Indian Air Force contin-

ues to be responsible for the air defence of the national airspace while the Airports Authority of India carries the responsibility for managing civil air traffic. Increase in civil (and military) air traffic would require much deeper synergy between the two agencies to ensure efficiency and safety, argues Atul.

3. ROLES AND MISSIONS OF THE INDIAN AIR FORCE - 2032 AD 37

The air force in the future would be influenced by changing technologies, weapon systems and operational requirements. This necessitates close attention to the future imperatives of the Indian Air Force (IAF), argues Air Marshal **Vinod Patney** SUYSM PVSM AVSM VrC (Retd), former AOC-in-C Western Air Command. The IAF is only one of the contributors towards “military power,” but it is the specialist Service to exploit the vertical dimension. Also implicit in the definition is the conviction that even though a single Service operation is a valid operation of war, it will be beneficial if it is the result of joint planning. Unquestionably, the major military requirement is to achieve the maximum possible degree of air dominance, because the effectiveness of air power in war will be governed by the degree of air dominance that can be achieved. An important mission for the air force must also be attacking targets and target systems deep into enemy country in order to definitely carry the war to the enemy as well as to expand the battle space to advantage, particularly if we are the stronger air force. The enemy should feel our presence throughout their territory if possible. Expansion of the battle space will put the enemy increasingly on the defensive.

4. CHANGE AND CONTINUITY IN WARFARE: AN INDIAN EXPERIENCE

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In his article, Brigadier **P.K. Mallick** argues that while 4th Generation Warfare would remain a serious challenge, the risk

of conventional war would require a significant reorientation of force structures and deployments. He questions the efficacy of a couple of large sized strike corps going deep into the heart-land of Pakistan and believes that the utility of currently structured holdings and strike corps is minimal. The question whether the existing organisation of the field army into corps, divisions and brigades should be retained, or a more flexible organisation of “task forces” directly controlled by a divisional or corps headquarters should be introduced, he believes, requires to be considered.

5. DISINFORMATION AND NATIONAL DEFENCE

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Psychological warfare and propaganda have been an intrinsic part of warfare from time immemorial. Air Marshal **V.K. Verma** AVSM VM VSM believes that the information age offers tremendous new opportunities in an era wherein information is power; hence, disinformation and propaganda regain relevance as non-lethal weapons where the vehicle for propelling these weapons is the media. This should be exploited to the maximum, using modern technology and methods to spread disinformation and influence public perceptions, both within our own country as well as abroad. He makes a strong case for the need for our military and the other national security elements to carve out an organisation so that we can exploit these non-lethal weapons fully.

6. NETWORK-CENTRIC WARFARE AND ITS STRATEGIC IMPLICATIONS

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Air Commodore **M. Matheswaran** VM examines network-centric warfare (NCW) at the tactical as well as strategic level. He argues that NCW requires changes in behaviour, process, and organisation to convert the advances of information age capabilities into combat power. Fighting network-centric rather than platform-centric warfare would necessitate changing how we train, organise,

and allocate our resources. Delays will mean higher costs and reduced combat power. If adversary targets are neutralised by NCW systems before they can engage in fighting with our forces, then the battle can be finished before it has really begun.

7. LEVERAGING OUTER SPACE FOR NATIONAL SECURITY 121

Dr. (Ms) **Ranjana Kaul** believes that that national security is symbiotically linked to the rapid changes taking place in the global space industry, bringing new challenges every day. The development of space security doctrines embedded in national security goals, of new space weapons systems; threat of deionisation of outer space; new arms race; obscuring boundary between air space and outer space; incalculable commercial gains from space related activities; shrinking natural resources in outer space; non-state and hostile entities with resources at command all demand that India's national security policy is empowered with an appropriate space policy together with attendant procedures and legislation to support it.

8. PAKISTAN'S NUCLEAR POSTURE: IMPLICATIONS OF INDO-US COOPERATION. 147

Noting the shifts in Pakistan's nuclear posture since the early days after the nuclear tests in 1998, Professor **Peter R. Lavoy** identifies five main features of Pakistan's strategic deterrence policy and these are described in some detail. A set of new long-term Pakistani strategic concerns stimulated by the expanding US-India partnership is identified and analysed. The basic point is that, in the perception of Pakistan, projected developments in India's nuclear and conventional military capabilities eventually could threaten the survivability of Pakistan's strategic deterrent, which has always been a major concern for the country's defence planners.