

➤ EDITOR'S NOTE

On April 22, 2025 the calm, picturesque and serene meadows of Baisaran Valley in Jammu and Kashmir (J&K) were shattered by a ghastly and heinous terror attack in which 26 innocent tourists were killed. The Pahalgam massacre, the first such large scale act by terrorists after the 26/11 Mumbai attack in 2008 was different as the tourists were killed based upon their religious identity. Carried out to disrupt the normalcy that had returned to Kashmir with a surge of tourism, the attack was also designed to create a rift within the country on communal lines. Intelligence inputs pointed towards 'The Resistance Front', an offshoot of the Lashkar-e-Taiba (LeT) which was created to foster insurgency in J&K following the abrogation of Article 370 in August 2019 which revoked the special status of J&K state. India took strong and unprecedented measures against Pakistan which included suspension of the Indus Water Treaty, revocation of visas of all Pakistani nationals, closing of borders, stopping bilateral trade and the expulsion of the military advisors of Pakistan, along with reduction of staff in the diplomatic mission in New Delhi.

Due to the strong political will, coupled with the growing expectation of the people of the country for punitive action, the Indian armed forces carried out a measured, focussed and non-escalatory attack on terror targets on Pakistan and Pakistan Occupied Kashmir (POK) in the early hours of May 7, 2025. Pakistan responded to this measured response by carrying out indiscriminate attacks on Indian military infrastructure and cities with missiles, drones and artillery shelling. The Indian Air Force (IAF) retaliated by carrying out attacks on 13 airfields and air defence command and control infrastructure, including radars, inflicting substantial damage that was

corroborated by open source satellite imagery. This 80-hour conflict was intense, with the IAF playing a leading and pivotal role in achieving the military objectives, controlling the escalation ladder, and terminating it on its own terms. Pakistan was forced to ask for a ceasefire that led to cessation of hostilities on May 10, 2025. This also was the first time that fighter aircraft from both sides were engaged in duels at long distances with BVR AAMs (Beyond Visual Range Air-to-Air Missiles) in such large numbers. While lessons from the conflict will continue to emerge and get analysed with time, the fact that air power will remain the primary 'go to' option when force needs to be applied would remain indisputable.

This edition of the *Air Power Journal* carries a number of articles on subjects ranging from Space Situational Awareness (SSA) to next generation weapon systems and nuclear issues, apart from a book review. In the first article on **"Space Situational Awareness and the Utility of the Arthashastra for Foreign Policy"**, the author underscores the importance of SSA and the inevitable need for cooperation over contestation. Linking it to the *Arthashastra*, the author explores the tenets of this ancient treatise and its applicability in the modern context for India as far as the outer space domain is concerned.

"Evolution of Technology: From Smart to Next Generation Weapon Systems" explores the development of smart (guided) weapon systems, its drivers and the challenges that emerging technologies pose for next generation weapon systems. Miniaturisation, advanced communication technologies, lasers, directed energy and cyber warfare would all have an impact on the development of next generation weapon systems, apart from sustainability and the cost factor. Whether the development of these weapon systems signals the end of conventional war has also been discussed in the article.

A significant increase in the size and diversity of China's nuclear arsenal has forced the United States to have a relook at its nuclear modernisation. **"US Nuclear Weapons Modernisation: A Reality Check"** takes a look at

the US nuclear modernisation in view of recent developments and the need for identifying critical and emerging technologies that would need to be incorporated in the modernisation and upgradation of its nuclear triad. The article also discusses the announcement of the 'Iron Dome' for America by President Donald Trump in January this year, and its challenges and implications.

“Effectiveness of Sanctions in Nuclear Non-Proliferation: The North Korean Case” debates the effectiveness of sanctions on states to coerce them to abandon their nuclear programmes. Using North Korea as a case study, the article discusses how the country has continued to challenge the international community through its provocative missile testing, despite the imposition of sanctions. Governed by an autocratic regime whose survival depends upon maintaining a strategic deterrent, the behaviour of such states raises doubts among other states with compliant regimes on the efficacy of sanctions to ensure security and stability.

“Atoms for Agriculture: Advancing Food Security Through Nuclear Applications in India” explores a subject that has been less researched and talked about. The role of agriculture in ensuring food security is paramount and through the use of nuclear applications using isotopes and radiation techniques not only can crop varieties and yields be increased but also pest control and conservation of land and water resources can be ensured. Nuclear science and technology offer sustainable solutions in agriculture and these have been discussed in detail.

In the book review section, *Atomic Steppe: How Kazakhstan Gave up the Bomb* has been reviewed. This book describes the compelling and fascinating journey of Kazakhstan, which was used as a testing ground for nuclear weapons, in its campaign against nuclear weapons. The book, authored by a native of the region, is based upon personal accounts, and the interests of the United States post the collapse of the Soviet Union in 1991, giving valuable insights into the non-proliferation endeavours by the people and the leadership of Kazakhstan.

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I hope this edition of the *Air Power Journal* provides enough food for thought to its readers to satiate their appetite. We look forward to suggestions and contributions from our readers to continue our unending quest for knowledge and learning.

Happy reading.



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