EDITOR'S NOTE

With increasing demands and proliferation of aerial platforms, the requirements of air power have increased manifold in the last decade. The types of aircraft, both manned and unmanned, have multiplied, the air space has become dense and congested, and the aerial platforms of today are able to perform a variety of roles and tasks, with some platforms even being designed to perform specific roles. Air power in all its facets, military, commercial, training, surveillance, disaster relief, logistics, medical, and agriculture, to name a few, has not only become an inescapable but also an inalienable part of our daily lives. The escalating costs of modern aerial platforms like the F-35, Su-57, Rafale, J-20, and J-31 fighter aircraft have placed increasing demands on national defence budgets that have struggled to keep pace with slow rates of economic growth coupled with rising inflation. India has its own concerns, faced with a two-nation threat and the increasing demands of indigenisation or '*aatmanirbharta*' that are yet to pick up the desired pace.

The importance of semiconductors or chips was realised by the world only after the disruption during the Covid pandemic. The 'chip war' had ramifications because of its criticality in manufacturing products, in both the civil and military fields, and the near monopoly of the same with only a few countries. The disruption in the manufacturing of semiconductors, the dependence on critical rare earth elements and the complexity of the manufacturing and supply chain networks awakened countries across the world on their dependency, which could be easily exploited. This led to the United States passing the Chips and Science Act in August 2022, which intended to strengthen its pole position in semiconductor technology, bolster research and development, and increase production capacity. India has also

embarked upon an ambitious plan for the manufacture and assembly of semiconductors, with the Indian prime minister laying the foundation stone for two plants in Gujarat and one in Assam. India aspires to be a global chip hub in the coming decade and has taken various initiatives like equipping more than 100 academic institutions with Electronic Design Automation (EDA) tools from Siemens EDA. The government has also put in place a Scheme for the Promotion of Electronic Components and Semiconductors (SPECS) to encourage local production of electronic components, including semiconductors.

Hypersonic technology has picked up pace with major global powers like the USA, Russia and China, even though it has been in existence since the Cold War era. The employment of air-launched ballistic missiles in the Russia-Ukraine conflict and the technological demonstration of Hypersonic Glide Vehicles (HGVs) by both China and North Korea have shattered the myth that these weapons would not be employed. There are many advantages of HGVs over ballistic missiles, as well as complexities in their trajectory and intended targets that could change the way future wars would be fought. Closer home, the induction of the S-400 system and the operationalisation of the INS *Dhruva*, a nuclear missile tracking ship, poses its own challenges of reviewing the decision support system to tackle the growing threats being posed by hypersonic weapons. India also needs to design and develop hypersonic weapons and make them an integral part of its arsenal.

The space domain is increasingly becoming congested, contested and competitive. The race for domination by the major space-faring nations has not only led to the militarisation and weaponisation of this domain but also to a lack of consensus on a variety of issues that govern the peaceful utilisation of space and responsible behaviour of states. China has become the second largest in terms of satellites launched into space. Its recent reorganisation of the Strategic Support Force into the Aerospace Force, Information Support Force, Cyber Space Force and Joint Logistics

Support Force has taken place less than 10 years after the Strategic Support Force was formed in 2015. India needs to accelerate its development and deployment of space-based assets, apart from collaborating with like-minded partners to achieve space situational awareness. The military utilisation of the space domain will have to increase in consonance with India's capabilities and the threats that the country faces from its adversaries in, from, and to, the space domain.

The development of multi-modal trade corridors has been carried out by a few countries to circumvent delays, provide an easy and cost-effective solution to facilitate trade, as also to build stronger ties with the countries and states involved. During the recent G20 Summit held late last year, India announced the setting up of the India-Middle East-Europe Corridor (IMEC). The International North-South Transport Corridor (INSTC) was established by Iran, Russia and India in September 2000 for the purpose of promoting transportation cooperation among its member states. This corridor connects the Indian Ocean and the Persian Gulf to the Caspian Sea region. It was further expanded to include 11 additional member states, viz. Azerbaijan, Armenia, Kazakhstan, Kyrgyzstan, Tajikistan, Turkey, Ukraine, Belarus, Oman, and Syria, with Bulgaria as an observer. This corridor would be instrumental in exploring the energy potential for the littoral countries of the Caspian Sea that have traditionally desired regional and international connectivity. There is tremendous scope for India to capitalise on the potential of this corridor for the delivery of oil and gas to the country.

This edition of *Air Power Journal* (APJ) examines disparate contemporary issues that have been spoken about in the preceding paragraphs. The endeavour at the Centre for Air Power Studies (CAPS) has been to encourage focussed research and bring forth issues of relevance in various domains related to aerospace power, national security, nuclear strategy and energy to our readers of the APJ.

As I take over as Director General, CAPS, I will strive to uphold the highest standards of relevant content for this journal. We will be delighted to receive your honest feedback and will certainly make an effort to incorporate the same. We also look forward to contributions from our esteemed readers as I firmly believe that together, we can make a difference in adding to the public discourse on contemporary issues.

Happy reading!

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