

EDITOR'S NOTE

The war in Ukraine has moved into the 21st month. The ground force movements have slowed down. The Russians had taken dug-in defensive positions in anticipation of the much advertised Ukrainian counter-offensive. The Russian Army created trenches, tank obstacles, and minefields to stem any planned fast Ukrainian advance. Despite the hype, the counter-offensive never got going. President Zelenskyy blamed the West for not giving enough material support from amongst the long list of his demands. The American Congress put brakes on how much more President Biden could keep pumping into a somewhat losing battle. The Pentagon did release another \$200 million in weapons and ammunition, adding to the nearly \$43 billion already received by Ukraine from the US since last year's invasion. Meanwhile, the Biden Administration is pressing for a fresh \$13 billion in emergency defence aid and an additional \$8 billion for humanitarian support to Ukraine. The Republican-led House has been very sceptical of the war. Support among the American public for providing Ukraine weaponry and direct economic assistance has also softened with time.

Meanwhile, realising the dithering on the Ukrainian side, the Russian Army formed an offensive group and started a concerted effort to re-take some parts of eastern Kharkiv which the Ukrainians had managed to take back a year ago. Ukraine acknowledged that the intensity of combat and enemy shelling was high. The Ukrainian authorities periodically ordered evacuations. By now, millions of Ukrainian refugees have left the country.

The drone war between the two sides continues to be intensified. Russia has hit targets as far deep as Odessa. Similarly, Ukraine has hit buildings in Moscow. Air defences on both sides are claiming a few thousand drones being shot down every month. Russia is known to have replicated the Iranian

Shahed-136 drone into the Russian version Geran-2, which explodes on impact. These can reportedly carry about 35 kg of explosives nearly 1,000 km, and can be controlled by satellite communications or fly autonomously.

The Biden Administration's ban on export of semi-conductors and other electronics is being effectively bypassed by Russia. Hundreds of Western businesses are still operating in Russia. Some say that Moscow has tied their hands, while others have chosen to stay put.

The presence of the Russia-linked Wagner group mercenaries in Belarus raised fears in Poland of illegal border crossings, and it decided to move 10,000 troops to strengthen its eastern border.

The first group of six Ukrainian pilots is not expected to complete training on the F-16s before next summer. There has been a series of delays by the Western partners in implementing the training programme for the sophisticated fighter jet.

The Russian invasion of Ukraine in February 2022 led to a complete halt of maritime grain shipments from Ukraine, previously a major exporter via the Black Sea. Additionally, Russia temporarily halted its grain exports, resulting in a rise in world food prices. Finally, in July 2022, the Russia-Ukraine grain agreement was signed to allow safe transportation of grain and foodstuffs from Ukrainian ports. The deal brokered by Turkey and the United Nations was valid for only 120 days. Russia initially suspended the agreement for several days due to a drone attack on Russian naval ships, but re-joined following mediation. There were many interim extensions. The last one was to expire by mid-July 2023, and the same was not extended. More than 1,000 ships had successfully left Ukrainian ports carrying nearly 33 million tonnes of grain and other food products to 45 countries. Russia repeatedly warned that it would withdraw from the deal unless its demands were met. Russia's demands were that Ukraine de-mine the water around its ports, and Russia's Agricultural Bank be reconnected to the global financial network, including SWIFT.

After cessation of the deal, Russia fired missiles and used drones against Ukrainian grain storage and loading facilities in ports that had been

previously protected by the initiative. Russia has given notice that any ship entering Ukrainian waters could be considered a legitimate target of war, irrespective of the owner. Meanwhile, President Putin promised during the opening ceremony of the 2023 Russia–Africa Summit in St. Petersburg to ship free grain to six low-income African nations.

India's Chandrayaan-3 spacecraft for lunar exploration was launched on July 14, 2023. The mission consisted of a lunar lander 'Vikram', and a lunar rover 'Pragyan'. The lander touched down near the lunar south pole region on August 23, making India the fourth country to successfully land on the Moon and the first to do so near the lunar south pole. The two have completed all the initially assigned tasks.

On September 2, 2023, India launched Aditya-L1, a coronagraphy spacecraft to study the solar atmosphere. It will be orbiting at about 1.5 million km from Earth in a halo orbit around the L1 Lagrange point between the Earth and the Sun where it will study the solar atmosphere, solar magnetic storms, and their impact on the environment around the Earth. These two events once again proved India's scientific and technological acumen and earned praise from the world.

The Indo-Pacific remains an area of increased action, with China continuing aggressive postures. India seeks a bigger role in the Indo-Pacific in coordination with its free-world partners. The joint visit of three former Indian armed forces chiefs to Taiwan for a conference raised eyebrows around the world. Some thought that this was some form of political signalling.

This issue of the *Air Power Journal* covers some very contemporary geopolitical topics. As the US-China competition for global dominance grows, China has decided to make qualitative and quantitative enhancements to its nuclear arsenal. This, combined with China's leaps in new technologies such as Artificial Intelligence (AI), quantum, hypersonic platforms and weapons, could result in game-changing scenarios.

China is also trying to increase its naval and aerospace capability to increase its reach and presence in the Indian Ocean Region (IOR). Dominance of the area is crucial as nearly 80 per cent of global seaborne trade passes

through it. India is working towards greater partnerships in the region, and increasing its air and maritime reach.

China-Pakistan collusivity remains of concern. With nearly 60 per cent of Pakistan's military equipment being of Chinese origin, and regular military exercises taking place, the interoperability remains high. China has also recommenced investments in the China-Pakistan Economic Corridor (CPEC). To secure its assets and construction teams from terror attacks, China has brought in nearly 10,000 Chinese security personnel.

Proliferation of unmanned systems, including small drones, increased number of dual-use airfields, and a fast growing airlines sector, have all brought new dynamics to air space management. In the Tactical Battle Area (TBA), the complexity has increased because of long-range weapons, heavy electronic environment, and increased autonomy. This requires a fresh approach to air space management.

In a contested war zone, long-range standoff precision weapons are the only way to cut down own losses. The Ukraine War has seen extensive use of these. Technology has allowed increased precision. However, these weapons are relatively expensive and there is greater importance of target weapon matching.

A key element of security against nuclear and conventional ballistic missiles is Ballistic Missile Defence (BMD). India already has a reasonable BMD which is gradually being upgraded. Pakistan is trying to acquire such a capability. Speaking at a seminar in Islamabad on May 24, Lieutenant General Khalid Kidwai (Retd.), who is currently an advisor to the country's National Command Authority (NCA), and the former director-general of the Strategic Plans Division (SPD), which is responsible for formulating nuclear policy and strategy, said that Pakistan has enough weapons to penetrate India's BMD.

With increased networking and connectivity, and the decision-making matrix being supported by computer-based algorithms, cyber warfare has become the area of major action. A scholar looks at this in greater detail.

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The *Air Power Journal* continues to flag current operational issues and publish well researched papers by domain experts and deeply involved scholars. We also invite more scholars to write for us, penning original thoughts and analysis.

Happy Reading
Jai Hind!

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