CENTRE FOR JOINT WARFARE STUDIES

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# RELEVANCE OF AIR SUPREMACY AND AIR SUPERIORITY IN CONTEMPORARY TIMES: LESSONS FROM CURRENT CONFLICTS

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ORGANISED BY CENJOWS
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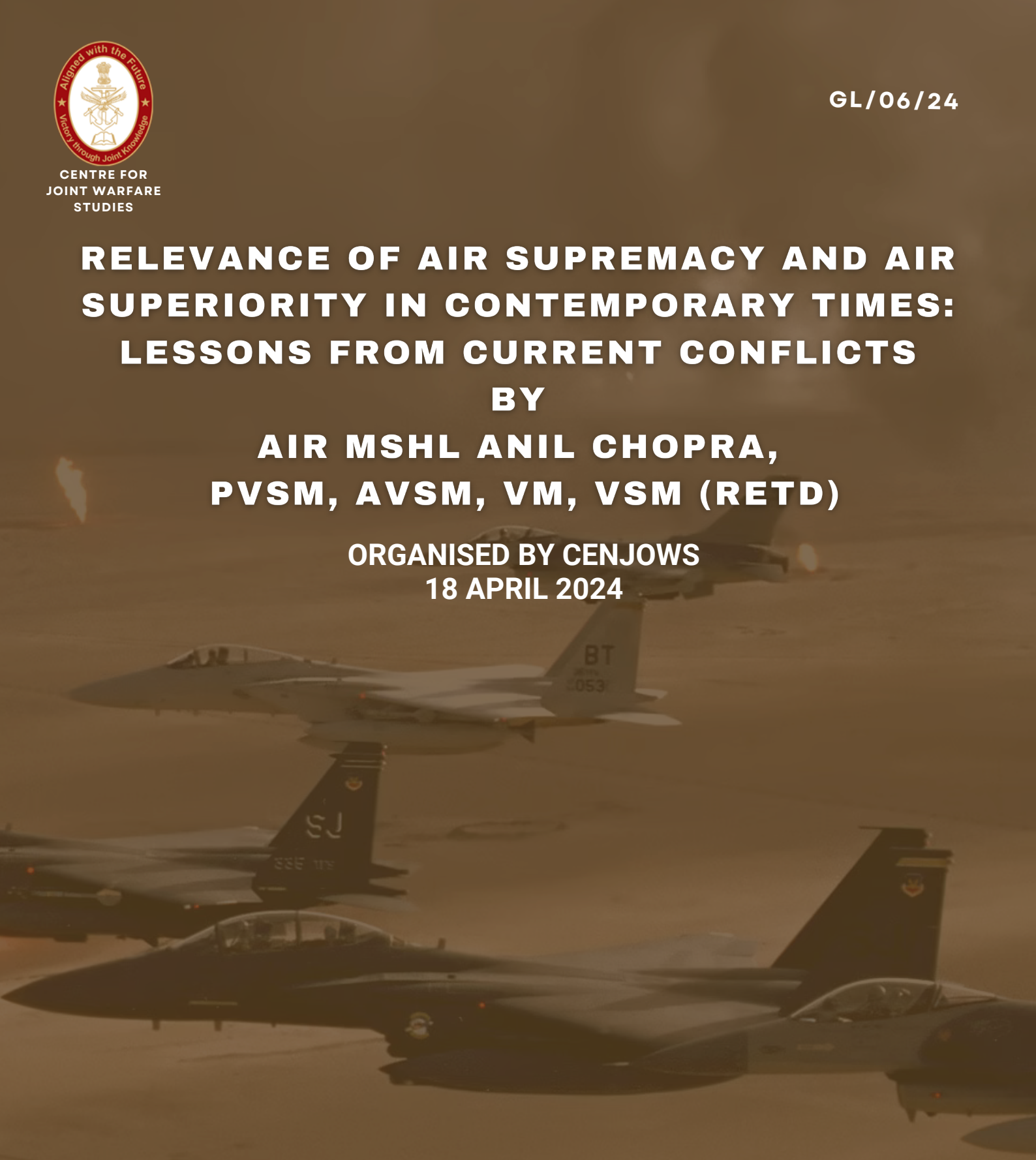

# RELEVANCE OF AIR SUPREMACY AND AIR SUPERIORITY IN CONTEMPORARY TIMES: LESSONS FROM CURRENT CONFLICTS

## BY AIR MSHL ANIL CHOPRA, PVSM, AVSM, VM, VSM (RETD)

## ORGANISED BY CENJOWS ON 18TH APRIL 2024

Control of air has been emphasised by various leaders in history as an inescapable requirement to win any war. Over the years, the need to achieve air superiority, supported by technology, has driven innovation. This has led to continuous advancements in aircraft, sensors and weapons design and capabilities, the latest being stealth technology, hypersonic weapons, and uncrewed systems, drones and Manned Unmanned Teaming (MUM-T).

Russia, in the ongoing conflict, had a lot of advantages over Ukraine in the use of air power in terms of numbers, operational conditions and technology. Still, it was unable to use air power effectively due to many inadequacies in its air operations. Following lessons can be drawn from the Russia – Ukraine conflict:

- Air superiority deserves greater importance and therefore, SEAD cannot be half-hearted.
- CSFO requires a relook in terms of use of stand-off weapons, loitering munitions, and attack helicopters.
- AD systems can blunt a larger adversary and therefore the need for complete cover from LRSAMs to Manpads.
- Air interdiction is very important. Must be deliberately planned and executed.
- Space, drones and MUM-T will play greater roles in conflicts.
- Anti-drone systems should be capable to take on swarms. These need further evolution.
- Integrated application of firepower and cross domain synergy have to exist.
- Stocking of PGMs for conflicts may be required especially for visualised long drawn conflicts which have become a new reality.
- 5th generation technologies and long-range air-to-air missiles are necessities.
- EW capability, GPS jamming, secure radio communication are all essentials.
- Training for denial of service is must.
- Supply chain logistics have to be robust.
- Defence production capabilities need to surge.
- Continuous doctrinal changes are needed to keep adapting.
- AEW&C is going to play a big role but needs to be stealthy now.
- Information Technology is a decisive factor in war.
- Irregular formations operating with regular forces will be required.

- AI is to be used for shortening the decision-making loop.
- Capability to create Creative Disruption must be developed.
- Cyber is a critical domain for all operations.
- Innovation is a continuous process that must take place.

From the Israel-Hamas conflict, following can be the takeaways:

- Need to develop cheaper counters to rockets.
- Need to develop cheaper PGMs.
- AD effectiveness against numbers (e.g. swarms) will need to be ensured.

By 2030, one would witness highly contested operational environments with integrated and networked air-to-air, surface-to-air, space and cyberspace threats in peer environment. The need would be to possess advanced fighter aircraft, sensors, and weapons, penetrating counter air capability, capability to defeat agile intelligent targets including drone swarms, counters for hypersonic weapons, low observable cruise missiles, and sophisticated conventional ballistic missiles, develop and exploit advanced MUM-T and DEWs, requirement of significant Cyber Force and fixing of logistics supply chains.

So, to ensure that the Indian Air Force is able to ensure control of air in future, certain gaps need to be filled. The IAF force levels (fighters, AEW&C, FRA) need accretion, capital budget needs to cater for modernisation as air power is technologically sensitive, indigenous programs and productions need to be hastened and industrial capability needs to be future proof, core areas like aero-engine, hypersonic, EW, cyber, space need to be focussed on, and spending on IPR - R&D must go up from current 6%. Additionally, there should be better war and training exposure, greater weapon stocking is required and supply chain security needs to be ensured.