

# EVOLVING FACETS OF AEROSPACE POWER IN A CHANGING WORLD

**BS DHANOA**

## INTRODUCTION

Good Morning, Ladies and Gentlemen. My special greetings to Air Mshl KK Nohwar, Director General, Centre for Air Power Studies (CAPS), former air chiefs, ambassadors and distinguished guests. It is always an honour and a privilege to come to CAPS and interact with so many senior serving and retired stalwarts as well as experts from the aerospace domain.

The seminar is a fitting tribute to one of the finest officers of the Indian Air Force (IAF), Wg Cdr KK Majumdar DFC & Bar. He has the achievement of being the first and only Indian pilot to have been awarded the DFC twice for his courage and daring leadership during World War II.

In the 20th century, air power had matured to the extent that it had started playing a decisive role in conventional conflict. The 38-day air campaign in the Persian Gulf War, followed by only four days' ground campaign was perhaps the best demonstration of air power's war winning capability.

The present debate on procurement of aircraft or equipment displays a lack of understanding on aerospace matters.

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Air Chief Marshal **BS Dhanoa** PVSM AVSM YSM VM ADC is Chief of the Air Staff, Indian Air Force. This address was delivered by him at the Jumbo Majumdar International Conference organised by the Centre for Air Power Studies on January 31, 2019.

Hence, my compliments to CAPS for regularly organising thought provoking seminars on air power issues of contemporary relevance, involving intelligentsia from across the world.

The talks and interactive discussions we will have over the next two days will further our understanding on the role and utilisation of air power in the changing world.

In our subcontinent, air power initially played a very nascent role post-independence during the Kashmir operations (1947) wherein the IAF, under strict rules of engagement, not being permitted to carry out offensive action, air-landed 1 Sikh Regiment into the war zone. This timely action saved thousands of innocent citizens from the brutality of the Pakistan sponsored invaders.

In the following three wars against Pakistan, the IAF played a stellar role in defeating the enemy. In 1971, complete air superiority was achieved by the IAF over East Pakistan, permitting a free run to our ground forces (Tangail paradrop and Meghna helilift). Thus, the liberation of Bangladesh was achieved within 14 days.

In 1999, during the Kargil War, our Effects-Based Operations (EBO) targeting key Headquarters (HQ) and logistics dumps evicted the enemy from his well-entrenched defensive positions on our side of the Line of Control (LoC).

This war was fought not just on the ground but also in the media wherein embedded journalists tilted the perceptions in our favour. This was the first televised war in the Indian subcontinent.

The social media is already a tool of propaganda widely used by terrorists and non-state actors to plan attacks and spread discontent within the forces.

In future conflicts, our adversaries will pose challenges not just in conventional but also hybrid war which will have components of cyber, space and information warfare. However, air power will remain a major player in future conflicts.

Investment in air power is an expensive proposition: each Su-30 costs Rs 417 crore, even the Light Combat Aircraft (LCA) Mk I costs Rs 191 crore.

So the question is: "Can we do away with it?" The answer is "NO". Not only is superior air power needed for winning a conflict, it is required for deterrence:

as the well-known Latin adage goes, “If you want peace, prepare for war” (*“Si vis pacem, para bellum”*).

A lot is being suggested by many armchair warriors on what our nation should do about it. Some people suggest that we need to reduce our manpower and put the money in the capital budget. For your reference, the entire salary bill of the IAF is Rs 16,621 crore, while our capital expenditure is Rs 35,407 crore. We need Rs 8,870 crore in revenue for fuel and maintenance as flying is a perishable skill. Hence, there is no way we can cut down on our manpower to pay for our capital acquisitions. The total cost of ownership of a platform needs to be considered. The Su-30 MKI was purchased as a replacement for the MiG-21 aircraft. The present manning of a Su-30 squadron is nearly twice that of a MiG-21 squadron and the cost of per hour operation is 3.5 times higher. In fact, the per hour cost of operating a Su-30 MKI is 1.4 times that of 4th Generation aircraft such as the M-2000. In the other example, we are raising two Medium Range Surface-to-Air Missile (MRSAM) units on the establishment of a single Pechora unit, which we will phase out.

Many suggest we buy more inexpensive fighters, often quoting Stalin who had said, “Quantity has a quality of its own.” Firstly, Stalin’s son was captured and died in World War II and none of these so-called advocates of this theory have their children serving in the armed forces. Secondly, in air power terms, it doesn’t hold true. As can be seen in the 1982 Bekaa Valley operations, where the Syrians lost over 76 3rd Generation fighters against Israel’s 4th Generation F-16s that suffered no losses. Is such an exchange ratio acceptable to us? It’s not that the country can afford an air force made up of only high-end fighters—there has to be a high/medium and low tech mix. It’s the high-end fighters and other equipment that help you shape the air battle for the others to be able to carry out their tasks. The government’s decision to acquire the Rafale and the S-400 would do this for us.

## INDIGENISATION

I am not suggesting that we give indigenisation the go-by. In fact, the Indian Air Force has a clear roadmap for indigenisation.

Our policy envisages a progressive improvement in the scale of indigenisation. We have procured and operationalised the indigenous Akash Surface-to-Air Guided Weapon (SAGW); are in the process of developing the MRSAM in collaboration with Israel; and will finally progress towards the Long Range Surface-to-Air Missile (LRSAM). In radars, we started with the Indra a long time ago and now make the Rohini and will progress to the Arudhra to ultimately make the long range surveillance radar in the future. Similarly, in the fighters: LCA Mk I—MK1A—MKII and, finally, the Advanced Medium Combat Aircraft (AMCA).

As an Indian, it was a matter of immense pride and delight for me to fly the indigenously manufactured LCA during the Aero India on February 14, 2017, at Bangalore. I would also like to share with you that I commenced my flying career in the IAF 40 years ago, learning to fly on the HT-2 and Kiran aircraft. Years later, as an instructor, I taught young budding pilots to fly the Kiran aircraft and flew close to 1,000 hours on this aircraft, accident free. All these were designed, developed and manufactured in India.

Prior to the LCA, in the 1960s-1980s, the Indian Air Force operated the indigenously designed, developed and manufactured HF-24 Marut fighter.

A crucial contribution to all the successes of indigenisation has also been the supreme sacrifice of the IAF's pilots in testing these aircraft to battleworthy standards. We have lost 17 pilots and engineers in air accidents during testing and evaluation of the indigenous Marut, Kiran, Ajeet, Saras and Airborne Early Warning and Control System (AWACS) prototype aircraft.

While indigenisation is important, it comes with a price. Out of the 19 Category-I accidents on the HF-24, 12 were due to technical defects, of which five were fatal accidents. But that did not stop us from encouraging indigenisation. It goes to the credit of the Aeronautical Development Agency (ADA) that designed and conceptualised the LCA, and the National Flight Test Centre (NFTC) which flight tested and further refined the aircraft without any major mishaps (touch wood!).

But to achieve competent levels of indigenisation, we need to also encourage manufacturing in India. Under 'Make in India' we are progressing

a case of manufacturing 114 fighter aircraft through a strategic partnership model and 40 x Airbus C-295 by an Indian production agency.

In indigenous manufacturing, we have contracted for 40 LCA Mk-I; the Request for Proposal (RFP) has been issued for 83 LCA Mk-IA; and we will be procuring 12 squadrons of the LCA Mk II and, then, finally, the AMCA. The IAF has not shifted any goal posts, as alleged. The development has taken such an incredibly long time that armaments and technology have become obsolete. To encourage Hindustan Aeronautics Limited (HAL) in manufacturing the LCA, we have maintained the Air Staff Qualitative Requirements (ASQRs) of the first 20 LCA Mk I at standards issued in 1985. Even though the squadron was formed in June 2016, it is equipped with only 10 aircraft. As of today, the backlog with HAL, due to the long overhaul cycle and delays in upgradation, is approximately of one squadron of the Jaguar, nearly two squadrons of the Su-30 and one squadron of the M-2000. In addition, production of the Su-30 is delayed by over two years, and the LCA production commitment by over six years. To make up for losses, HAL has to play a key role to step up manufacture and overhaul. We desperately need the HTT-40 to do our Stage II training, along with our basic training as the Intermediate Jet Trainer (IJT) project has not yet succeeded after 15 years. To overcome our production delays and the falling number of fighter squadrons, we, thus, had to make emergency purchases as we needed equipment for winning the high end fight, for which the government has sanctioned the purchase of the Rafale and S-400.

We are also mindful of our commitment towards conserving natural resources. The IAF, in collaboration with the Bureau of Standards, has realised international grade bio-fuel standards and this will not only reduce the carbon footprint by military and civil aviation but also bring an additional source of income for our farmers.

I am positive that the eminent speakers of the seminar will, over the next two days, generate discussions that will invoke new ideas and refine our present understanding on air power and its crucial role in the changing world.

Thank you and Jai Hind!

