

Implementation of Flexible Use of Airspace and Its Impact on Air Power

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Little more than a century ago, as aviation was born, the worth, or power of a nation resided in its economic status, that is, its buying capacity. As the years wore on, the pedestal on which a nation's power resides has acquired many more pillars to bolster itself. These include, in addition to economic power, diplomatic influence, international relations, natural resources and, most importantly, military power. All these factors, apart from being significant on their own, are intrinsically linked with each other, so much so that without one, the existence of the others would be meaningless. Similarly, any weakness in one would have to be supported by a proportional increase in capability of the others. Herein lie our dreams and hopes as a nation.

Ever since attaining independence, India has grown by leaps and bounds to become a formidable world leader and an indomitable presence on the world stage. As our aspirations grow, as India looks for a more significant role within the powers that be, there is an ever significant need to strengthen all our

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pillars. The aviation sector can be seen as a common thread that runs through each of these facets, making it arguably one of the greatest contributors to a nation's power. To further the interests of the aviation industry and thereby fuelling the rapid growth of our economy, the government has implemented the concept of flexible use of airspace (FUA) in India. This development has been hailed as a boon by the struggling aviation industry stakeholders and is likely to contribute greatly towards strengthening the nation. However, in order to ensure that this contribution matters as much in the long run, a lethal military is of utmost importance. Out of all the three fighting arms of our nation, the tip of the spear is provided by the air power of the nation. To keep this tip sharp and lethal, a monumental effort is put in towards maintaining a continuous momentum in operations by the Indian Air Force (IAF).

Significant changes are taking place on the global stage and in our neighbourhood. Old problems persist while newer concerns are added with alarming regularity. The role of military power has increased, as security concerns are spreading beyond national boundaries. The IAF has demonstrated its professional competence against the backdrop of global turmoil.¹ A potent and lethal IAF can contribute to national power and to peace and stability, not only within the country but also within the region. It must, therefore, grow in step with the nation. Keeping in mind the importance and requirements of both spheres of air power, it is crucial that both stakeholders understand the importance of the other.

1. Ministry of External Affairs, Government of India, "UN Peacekeeping: India's Contributions" by Ambassador (Retd.) Asoke Kumar Mukerji, published on the website of Ministry of External Affairs, Government of India on November 8, 2019, at www.mea.gov.in/articles-in-indian-media.html/32014/UN_Peacekeeping_Indias_Contributions. Accessed on September 3, 2022.

CIVIL AVIATION AND THE NEED FOR FUA

India is one of the frontrunners of the world as far as civil aviation is concerned. As per Ministry of Civil Aviation Data, Indian domestic traffic makes up 69 per cent of the total airline traffic in South Asia.² It is anticipated that Indian airports will be handling 1 billion trips annually by 2023.³ Under the Regional Connectivity Scheme, India has operationalised a total of 68 airports in the last five years,⁴ offering air connectivity to masses where there was none. India is also looking at bolstering air cargo operations to further enhance revenue.

The revenue generated by the civil aviation sector is a boon for our economy. In addition, civil aviation has massive job generation potential. As the economies of the world tie into the demands in India, the civil aviation industry is quickly making its presence felt as a diplomatic resource as well.⁵ Keeping the Indian airspace open for use by transiting international air traffic is also a source of revenue as well as diplomatic leverage.

As is evident, the growth and sustenance of civil aviation industry directly impacts our growth as a nation. However, the industry has also faced substantial hindrances in the recent past. With instability in the Middle East, other international military conflicts as well as progressive depletion of natural resources, Aviation Turbine Fuel (ATF) prices have been on an upward climb

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2. The PRS blog, PRS legislative research, "State of the Civil Aviation Sector in India", at www.prsindia.org/theprsblog/state-of-the-civil-aviation-sector-in-india. Accessed on September 3, 2022.
 3. India Brand Equity Foundation article on Indian Aviation Industry, at www.ibef.org/industry/indian-aviation. Accessed on September 7, 2022.
 4. Airports Authority of India, "List of RCS airports operationalised as on July 12, 2022", at www.aai.aero/en/node/275985. Accessed on September 7, 2022.
 5. NDTV, "Nepal earthquake: Indian Air Force, Army made 2223 sorties, rescued 11,200 people", at www.ndtv.com/india-news/nepal-earthquake-indian-air-force-army-made-2223-sorties-rescued-11200-people-769167. Accessed on September 7, 2022.

for the past many years.⁶ This, coupled with teething issues with the Regional Connectivity Scheme (RCS), namely, complications in land acquisition, viability of certain routes, insufficient capacities of airports and airspace vis-à-vis consumer demand have put immense pressure on the civil aviation industry.⁷

Towards relieving this pressure and to ensure the civil aviation sector remains as viable as it is, FUA was implemented by the Government of India in 2014. At the time of implementation, savings to the tune of Rs. 1,000 crore annually⁸ were expected to accrue as a direct impact of FUA. The obvious benefits of smaller flying times and subsequently, smaller ATF bills,⁹ was not lost on the civil aviation sector, which hailed this development as a saviour in turbulent times.¹⁰

FUA AND AIR POWER

The FUA manual formulated by the ministry of civil aviation explain FUA as an airspace management concept based on the principle that airspace is a finite sovereign resource which should be treated as a continuum in which all user requirements are

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6. *The Hindu*, “Jet fuel prices in India touch new record after 16% hike”, at www.thehindu.com/business/Economy/jet-fuel-prices-in-india-touch-new-record-after-16-hike/article65532976.ece. Accessed on September 10, 2022.
 7. *The Print*, “Lack of infra, low demand, pandemic—why UDAN has only 41% flight routes after 4 years”, at www.theprint.in/india/lack-of-infra-low-demand-pandemic-why-udan-has-only-41-flight-routes-after-4-years/622360/. Accessed on September 9, 2022.
 8. Aneesh Phadnis, “Govt revives flexible use of airspace policy, move to help airlines”, *Business Standard*, May 21, 2020, quoting then Finance Minister, Nirmala Sitharaman.
 9. Tusschar Srivastava, “India attempts flexible use of airspace to cut time, costs”, *Hindustan Times*, June 10, 2015, quoting COO SpiceJet. Accessed on September 10, 2022.
 10. International Air Transport Association, “Improving Indian skies will help airline efficiency”, quoting IATA Country Director for India, at www.airlines.iata.org/news/improving-indian-skies-will-help-airline-efficiency. Accessed on September 10, 2022.

accommodated to the greatest possible extent. As is evident, the concept of FUA ultimately aspires to the creation of temporary reserved/segregated areas, which can be managed dynamically, as opposed to permanent restricted airspaces in which only military operation takes place and which are not open to airspace management, which was so far the norm for the Indian Air Force.¹¹

With the implementation of FUA, the IAF has seen a host of changes in a very short span of time. An ever-increasing number of conditional routes are cutting across our local flying areas with the number of aircraft on these routes seemingly increasing each passing day. Many of our airbases have now been opened to civil scheduled aircraft.¹² All IAF local flying areas have been converted to temporary restricted areas above Flight Level 325.¹³ These changes have put a considerable strain on the planning and execution of flying operations. With so many variables and greater participation of civil aircraft in our airspaces, planning of large-scale exercises are also subject to strict timelines and stringent compliance criteria. However, as we rise to the challenges posed, FUA can also be seen as a way forward for IAF.

Due to the unique geopolitical situation prevalent in the Indian subcontinent, even though a great emphasis is laid on economic development, the security of the nation remains of paramount importance. Recent developments have shown us that the foundation of our nation's security rests on the IAF's state of operational readiness.¹⁴ Towards ensuring and enhancing the same, our leaders have ramped up procurement, training and

11. Ministry of Civil Aviation, Government of India, "Manual on flexible use of airspace India", published by Ministry of Civil Aviation.

12. *Business Standard*, "7 more military airports to increase assistance to civil airlines", at www.business-standard.com/article/current-affairs/7-more-military-airports-to-increase-assistance-to-civil-airlines-122060400046-1.html. Accessed on September 13, 2022.

13. Airport Authority of India, *Aeronautical Information Package Amendments*.

14. *The Economic Times*, "Balakot air strikes displayed forces' capability to strike deep in adversary's territory", at www.economictimes.com/news/defence/

every possible step has been taken to sharpen the edge of the sword that is the IAF. History is witness to the fact that in any armed conflict, even the most formidable weapon is only as good as the men operating the machine. Looking at the problem from this perspective explains the absolute, vital necessity of facilitating training operations. Consequently, even though we are now equipped with aircraft that are capable of acquiring targets at distances beyond 100 NM using BVR weapons, unless sufficient airspace is available for developing and practising tactics using these weapons, their optimal utilisation in a war cannot be assured.¹⁵ Here, it is pertinent to mention that upholding our nation's air power cannot and should not be viewed as only a step in enhancing our warfighting potential. Having an effective and lethal air force also gives teeth to the government's foreign policy.¹⁶ Although it can be argued that the same is achieved by empowering our sister services, the capability of the air force to strike deep into enemy territory, carry out precision strikes with minimal risk to our troops and to inflict swift and devastating damage on an enemy is unparalleled. Striking a balance between enhancing air power and the economy is now the need of the hour.

SQUARE PEG IN A ROUND HOLE

The concept of FUA in India has been formulated in accordance with the basic guidelines provided by the international civil aviation organisation, but has been modelled predominantly on functioning of Federal Aviation Administration (USA) and EuroControl (UK and European Union). At the outset, it has to

balakot-air-strikes-displayed-forces-capability-to-strike-deep-in-adversarys-territory-experts/articleshow/81232423.cms. Accessed on September 7, 2022.

15. Excerpt of Chief of Air Staff interview with PTI published on June 27, 2022 in *Indian Express* entitled "IAF can deliver desired punch when required within short time frame: Air Chief Marshal".

16. Ibid.

be understood that the aviation requirements of a country like the USA or any European country are vastly different from India.

In the USA, being a geographically gigantic country with relatively lesser population density, it is possible to demarcate sectors or areas of airspace which can be reserved for military operations and identify timing blocks during which operations can continue over these areas without significant hindrance to civil aviation operations.¹⁷ In India, with the advent of RCS, there are virtually no pockets of airspace which are not significant to civil aviation, where military aviation can continue unhindered and unrestricted.

The scenario in Europe is quite different, wherein there are European countries whose entire airspace is equivalent to the sum of two or three IAF LFAs. EuroControl flexible use of airspace depends upon formation of contiguous volumes of airspace which are no longer constrained by national boundaries.¹⁸ This frees up quite a substantial number of possibilities, making available an array of options with combinations of countries with sparsely used airspace and larger air forces with large airspace requirements. Further, the sheer expanse of IAF as a fighting force is huge as compared to some of the smaller European nations, being the fourth largest air force in the world (by number of aircraft).¹⁹

The system in place which functions well and without hiccups in the respective countries, may not be viable for the coordination hassles faced in India. India is in a unique position wherein the density of population as well as the increase in air traffic and number of aerodromes allows for little to no latitude in terms

17. Federal Aviation Administration, Government of United States of America, "FAA Order JO 7400.2- Procedures for handling airspace matters".

18. EuroControl, "Flexible Use of Airspace (FUA) AMC/CADF Operations Manual".

19. *World Population Review*, "Largest air forces in the world 2022", at www.worldpopulationreview.com/country-rankings/largest-air-forces-in-the-world. Accessed on October 1, 2022.

of military aviation operations. Additionally, underutilisation of military aviation assets and reduction in available training opportunities are contrasted with the need for enhancement of civil aviation for the betterment of the economy. The need of the hour is for both the stakeholders to chalk out a viable solution.

FINDING COMMON GROUND

With the implementation of FUA, a hitherto intangible resource has become a bone of contention of sorts between military and civil operators with both sides having a rightful claim over the limited airspace available to us as a nation. As the survival instincts of both sides collide there is a need to look at our conflicts from the common ground that both sides share, national interests. While it is indeed true that implementation of FUA does tie the hands of military operators so that civil aviation can spread its wings, instead of looking at the situation as a hindrance to our operations, it could be viewed as an opportunity to evolve and contribute further to the growth of the nation.

Development of the aviation industry and strengthening of our military are both in the pursuit of one common objective, which is furthering the national interest. When looked at from this perspective, the situation no longer remains a predicament. Further, although it is well understood by now that FUA requires certain concessions to be made by military operators to accommodate the interests of civil aviation, the reverse also holds good. The FUA manual seeks to formulate plans and procedures so that interests of all airspace users are catered for. Along with implementation of FUA, coordination procedures have been formulated which clarify the procedure to be followed. To ease the transition, concerted efforts are required to formulate our own procedures and finalise our areas and timelines of operations. It needs to be understood that the clearer our intent, the easier it will be to convey the same to other airspace users. It is in our best

interests to look to the future with intent of evolving rather than continue looking to the past wistfully.

THE WAY FORWARD

While it cannot be contested that implementation of FUA in the Indian airspace complicates matters greatly for the Indian Air Force, what we do next will determine the efficacy of the IAF in the upcoming times and, as such, further course of action has to be decided at the earliest. The FUA manual speaks about greater military-civil coordination and therein lies the way forward. The level of coordination flexible use of airspace calls for can only be attained by immaculate planning of flying operations. As the density of air traffic increases over the Indian subcontinent, so will the number of ATS routes required to accommodate the increased number of aircraft. This, in turn, would entail greater restrictions on military aviation.

Moving forward, greater emphasis needs to be put on planning of not only large-scale exercises but day-to-day flying exercises as well. At the base level we have to understand that in keeping with the present procedures, going forward the number of civil flights that would be affected by military airspace closures will only go up, and hence proper planning would afford the operators sufficient advance notice to plan alternate routes. With the implementation of flexible use of airspace, intent of the civil authorities is to convert all restricted airspaces to ones that can be tactically managed, which would imply that the same planning requirements that now apply to exercises would apply to routing flying operations, so that the FUA manual is followed in letter and spirit. This has the potential to be of extreme benefit to our economy, which would, in turn, strengthen our armed forces.

As yet, the modalities of coordination for airspace usage rely heavily on the precedent set by European countries. This needs to be moulded to our needs and local conditions to come up with solutions suitable to all operators. Large-scale assessment of all

our airspaces is required vis-à-vis flying operations envisaged. Wherever possible, a system of time blocks can be implemented wherein the airspace is allotted for military use on a regular basis for a specified period of time. Herein, again, the importance of effective and precise planning cannot be overstated as the civil authorities have the wherewithal to determine whether the time slots which have been allotted are being gainfully utilised.

Additionally, a survey must be carried out to find pockets of airspace and an area defined for use for operations, which can be activated, following due procedure, for types of operations requiring a larger sector of airspace. The survey can involve participation and consultation from civil aviation counterparts so that the requirements of both parties are understood and represented correctly while formulating plans and procedures.

CONCLUSION

In closing, it is imperative that military and civil aviation integrate, to take advantage of each other's capacities and core competencies, identifying complementary capabilities and training to create a new, enhanced hybrid. Moving forward, civil and military aviation, and indeed all organs of national power, must synergise as, in the end, it is people that make an institution or system work. As they say, the best ones can be rendered ineffective for want of skill, commitment and morale. This would depend upon joint thinking, planning, capability creation and execution so that all involved can grow in an evolutionary manner. As India continues to indulge further and enjoy its place as a major player in international trade it is axiomatic to assert that the IAF has, from its formative year, through its many baptisms proved itself to be an accountable, potent, responsive and disciplined element of national power and it must be allowed its space and primacy to continue to hone and sharpen its cutting edge.