

CHAPTER V: CONCLUSION

Indian Air Force (IAF) was operating MIG-21 series of aircraft manufactured during 1966 to 1987. Majority of these aircraft were to complete their total technical life and were expected to be phased out in the 1990s, thereby resulting in significant fall in combat level of Air Force. Thus, IAF mooted the proposal (early 1980s) for a replacement aircraft for MIG-21 fleet. It was against this backdrop that the indigenous design & development of Light Combat Aircraft (LCA) was sanctioned (1983) and Aeronautical Development Agency, Bangalore was formed (1984) to execute the programme.

As specified in the ASR (1985), LCA was required to be inducted into IAF by 1994. However, the LCA programme was riddled with delays right from the sanction of 1983 and even after three decades since, LCA is yet to be inducted into IAF squadrons.

During the course of phased development, ADA's decision to advance building of two prototypes from FSED Phase II to FSED Phase I rendered these prototypes deficient of critical on board systems, which had a cascading effect on the remaining three prototypes, and led to ADA using even the Limited Series Production aircraft meant for IAF use towards flight testing/evaluation, in contravention to the commitment given to the GoI at the time of obtaining sanction for building of these aircraft.

Further, IOC for LCA Mark-I was achieved (December 2013) with 53 concessions/permanent waivers, which limits the operational efficiency and survivability of the aircraft. Consequently, LCA Mark-I currently under development (both IOC/FOC aircraft) has shortfalls in meeting the engine thrust and other parameters such as weight of the aircraft, fuel capacity, pilot protection from front against 7.62 mm bullets etc. The self-protection jammer which was originally to be fitted on LCA Mark-I is now planned to be fitted on LCA Mark-II, thus the 40 LCA Mark-I would be provided only with RWR Tarang-1B and deficient of self-protection jammer, thus limiting its electronic warfare capabilities. Thus, IAF would be constrained to use 40 LCA Mk-I

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aircraft with limited operational capabilities, and LCA Mark-II being developed by ADA presently is expected to meet the ASR.

Delays in identification/replacement/ addition of weapons by IAF and their integration as per IAF requirement to make the LCA contemporary also added to the delays. In addition, there have been delays in completion of work packages by various work centres, which indicated ineffective monitoring of the project by MoD.

User involvement right from inception would be essential for effective and efficient completion of any project. However, active user (Air HQ) participation in the LCA Programme started only after November 2006, even though the need for a Liaison Group between Air HQ and ADA to ensure closer interaction between the design team and the user for better appreciation of mutual perception, had been recommended by the LCA PDP Review Committee as early as in 1989.

Though ADA claimed achievement of 70 *per cent* indigenisation, half of these sub-systems are developed with imported electronic components and accessories etc. The LCA programme suffered major setbacks in the indigenous development of Kaveri engine, Multi-Mode Radar, self-protection jammer, etc. The proposal for indigenous development of 109 LRUs was pending approval since February 2014.

The setting up of a production capacity of eight LCA *per annum* was delayed by HAL, which coupled with delay in production capacity augmentation, had impacted the formation of LCA Squadrons. Further, there has been delay in the manufacture and supply of series production aircraft due to delayed LCA development.

As a consequence of delay in development and induction of LCA, IAF had to up-grade MiG Bis, MiG-29, Mirage-2000 and Jaguar aircraft at a cost of ₹20,037 crore and revise phasing out of MiG-21 to ensure credible combat potential.

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Considering that measures taken by IAF to upgrade other aircraft were of temporary nature and induction of LCA was crucial for maintaining the operational preparedness of IAF in order to overcome the drawdown of squadron strength permanently, the LCA programme needs to be expeditiously completed to cater to the needs of the Defence Forces so as to avoid import of the fighter aircraft of this class and to ensure self-reliance in the long run.



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