



## Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

### **PROSPECTS FOR MAKE IN INDIA IMPROVE FURTHER**

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#### **Introduction**

It has been clearly understood by most serious defence and security strategists in India since 1947 that the country requires to be able to develop and build its own defence equipment indigenously in order to ensure its security. This apparent understanding led to the design and development of the HT-2, HJT-16, and HPT-32 trainers, the HF-24 “Marut” fighter and other aircraft programs. The main end user of indigenously designed and built aircraft, the Indian Air Force (IAF) often found that indigenous equipment fell short of the globally competitive performance standards required by the service. This led to direct import of aircraft and their associated equipment, at times with license manufacture of these items. It had apparently been hoped that license manufacture would assist in inbound technology transfer. These attempts to build up indigenous capabilities failed to deliver on the hoped for outcome of self sufficiency in defence equipment. This shortfall in turn led to India becoming the world’s largest arms importer. Throughout this process the IAF has been a strong supporter of greater self sufficiency in domestic capability in aerospace manufacturing while having to insist upon equipment that met its operational requirements. The recent efforts of the Indian Government to encourage “make in India” appear to be brightening the chances of greater self sufficiency in aerospace equipment.

#### **Current Trends**

The recent negotiations for modern equipment for the Indian military forces involve build under license as well as transfer of technology (ToT) of modern cutting edge technologies. The negotiations for the Rafale fighter with France involved the ToT of amongst other items the Active Electronically scanned array (AESA) radar. The IAF and the Government decided that the project to replace the obsolete HS-748 “Avro” transport aircraft would involve only Indian private sector companies



## Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

working in collaboration with global aerospace majors for technology access to build the bulk of these new aircraft in India<sup>i</sup>. In this manner it is hoped that the ToT will be more effective than it has been till date in situations of public sector organisations being the sole domestic operators in the field of aerospace manufacture. The “Avro” replacement contract is being bid for by Tata Advanced Systems Limited (TASL) a Tata group company in collaboration with Europe’s Airbus Industries<sup>ii</sup>. Recent reports in the media bring out that Airbus Industries is in the process of establishing a collaborative arrangement with Mahindra Defence Systems (MDS) the defence arm of the Mahindra and Mahindra Company to build helicopters in India. It is expected that this collaborative arrangement would be able to meet the helicopter needs of the Indian military services and other operators<sup>iii</sup>. Since 1947 and before the Indian domestic aerospace sector has been characterised by a state monopoly in terms of the Defence Public Sector Undertaking (DPSU) Hindustan Aeronautics Limited (HAL) being the sole designer and manufacturer of aircraft. This monopoly was enforced by the Industrial policies of the country which reserved the field of aircraft manufacture for the state exclusively. The presence of a monopoly, especially a state run monopoly, resulted in almost all the inefficiencies of monopolies progressively creeping into the domestic aircraft Industry. This situation has had a detrimental effect on the availability of equipment for the legitimate operational needs of the Indian state. The relaxation of the nation’s industrial policies since 1991 and recent active encouragement to the private sector to operate in the field of aircraft manufacture bodes well for the future of the Indian aerospace industry. The private sector operates on a profit and competitive model that shuns bureaucratic behaviour for the most part. Hence the private sector companies that enter into aircraft manufacturing in India could be expected to be more efficient in inward technology absorption and further utilisation in order to gain higher profits in the medium to long term. Such a situation could reasonably be expected to lead to a robust domestic aircraft industry in the medium to long term with concomitant beneficial effects on military preparedness as well as on the larger national economy. The ability of the Indian private companies, TASL and MDS, that have reportedly already tied up with global aerospace majors to launch collaborative ventures to manufacture modern aircraft to internalise technology will play a major role in the future success or failure of the Indian aerospace industry. While much is expected of the private sector entering the field of aircraft manufacturing it



## Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

should be understood that the private sector alone cannot be a panacea for the country's aerospace manufacturing sector. Investments in research and development (R&D) in aerospace technology are very high. Even in the US several major aircraft manufacturing companies underwent extreme financial stress or even failed under the high R&D cost of developing new aircraft and systems<sup>iv</sup>. Hence, while the presence of Indian private industry in aircraft manufacturing is desirable and can help build up a robust aircraft manufacturing ecosystem, the DPSUs would require to run alongside to supplement the private sector's efforts both the private industry and DPSUs involved in aircraft manufacture would require hand holding by the Central Government and possibly also by state governments for success of the domestic aircraft industry as a whole.

### **Conclusion**

The Indian Aircraft industry has been a state monopoly since before Indian independence for several reasons including the Indian government's industrial policies that till 1991 placed aircraft manufacturing in the list reserved exclusively for the state. The resultant monopoly combined with the bureaucracy inevitable in most state run enterprises has resulted in the products of the country's indigenous aircraft industry falling short of the Indian military's operational requirements. Due to the lack of domestic sources for advanced equipment India achieved the dubious distinction of being the world's largest arms importer. The new "make in India" policy of the government along with permission to the private sector to enter the field of aircraft manufacture has led to Europe's Airbus Industries, the major aerospace company in west Europe, to tie up with TASL and MDS to manufacture the C-295 transport aircraft and helicopters respectively in India. This entry of the private sector into aircraft manufacturing in India bodes well for the future of India's aircraft industry. R&D in modern aerospace technology is a very expensive task. A modern fighter aircraft could require as much as several billion\$ for R&D alone. Other expenses could include setting up of testing and manufacturing facilities alongside the infrastructure to support the aircraft over its life span. In view of the very high cost of design and development in the aerospace industry, private players that enter the aircraft industry in India could require support from the government until such



## Centre for Air Power Studies (CAPS)

Forum for National Security Studies (FNSS)

time as they achieve self-sustaining revenue streams and become independent financially and able to undertake R&D without further support.

*(Disclaimer: The views and opinions expressed in this article are those of the author and do not necessarily reflect the position of the Centre for Air Power Studies [CAPS])*

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<sup>i</sup> OneIndia Defence Desk, "Tata-Airbus given final nod for Avro replacement project", <http://www.oneindia.com/india/tata-airbus-given-final-nod-for-avro-replacement-project-1746473.html> accessed on 06 July 2015.

<sup>ii</sup> Ibid

<sup>iii</sup> [P.R. Sanjai](http://www.livemint.com/Companies/RzKMUJxRwUGbbrBrFKSSTM/Airbus-Helicopters-teams-up-with-Indias-Mahindra-Group.html), "Mahindra, Airbus Helicopters sign pact for chopper venture", <http://www.livemint.com/Companies/RzKMUJxRwUGbbrBrFKSSTM/Airbus-Helicopters-teams-up-with-Indias-Mahindra-Group.html>, accessed on 06 July 2015.

<sup>iv</sup> [generalatomic.com](http://www.generalatomic.com/jetmakers/chapter2.html), "The Aerospace Industry Since World War II: A Brief History", <http://www.generalatomic.com/jetmakers/chapter2.html>, accessed on 06 July 2015.