

DEVELOPMENT OF INDIGENOUS HELICOPTERS IN INDIA - HISTORICAL PERSPECTIVE, CHALLENGES AND FUTURE POTENTIAL

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Abstract

In independent India, design and manufacturing of aircrafts is intricately linked to Government labs and Defence Public Sectors. In case of fixed wing aircrafts, there are more than one design agencies in addition to Hindustan Aeronautics Limited (HAL), such as ADA, DRDO and NAL. However, in case of rotary wing aircrafts, HAL is the only company involved in the design and development of helicopters. This paper is an attempt to chronicle the journey of HAL, from a licence producer of helicopters starting in 1964 to becoming a key player in design and production of indigenous helicopters. The journey had its ups and downs, trials and tribulations, leading to success. The paper addresses the Design and manufacturing challenges faced during the development. That HAL rolled out its 300th production helicopter of Advanced Light Helicopter (ALH) in September 2020, bears testimony of its perseverance. Presently, HAL has come a long way and has emerged as a major company in India which is capable of design, development, testing, integration and certification of indigenous helicopters and augmented with capability in production, maintenance, repair and overhaul of helicopters. The experience reveals that indigenous design and development has its own share of uncertainties and risks and hence will suffer from time over run due to inexperience, design iterations, performance issues, lack of manufacturing capabilities and limitations in eco-system etc. while bringing out first product. However, things improve with consecutive products. The hard truth is that the only path left to the developing countries, is to start the design (if required with design consultancy from abroad), make sincere efforts to learn through mistakes, sweat it out and improve the product.

Keywords: Design, Development, Helicopters, ALH, LCH, LUH