

The Success Story of LCA Navy Arrested Landing on INS Vikramaditya



The Indigenously Designed and Developed Naval variant of the **Light Combat Aircraft (LCA Navy)** achieved a major milestone in Indian Naval history by successfully conducting maiden landing on INS Vikramaditya on 11th January 2020. The LCA Naval fighter later took-off from the carrier Ski-jump Ramp the next day, 12th January 2020 and landed at INS Hansa, Dabolim, Goa.

The LCA Navy Mk1, as a Technology Demonstrator (TD), has undergone vigorous testing at the Shore Based Test Facility (SBTF), a replica of an aircraft carrier, created at INS Hansa, Goa. The SBTF was a unique facility established at INS Hansa, Goa with 14 degree Ski-jump take-off and with two Arresting Gear Systems (AGS), along with other associated equipment. This specialized test facility has been established to undertake the task of naval specific flight testing, also known as Carrier Compatibility Testing (CCT). Presently the facility is also being successfully utilized for training of Indian Navy Pilots with MiG 29K for qualifying carrier borne operations.

LCA Navy had its successful maiden Ski-jump launch at SBTF on 20 December 2014 and maiden Arrested Landing on 13th September 2019 at SBTF. As of now, the two LCA Navy prototypes have successfully carried out 45 Ski-jump launches and 28 traps at SBTF. In addition, in a short span of 5 days they also carried out 18 traps and 18 ski-jump take-offs on INS Vikramaditya between 11th to 15th January 2020.

The LCA Navy Programme is the first indigenous effort to build a modern fighter aircraft for the Indian Navy by Aeronautical Development Agency (ADA) with Hindustan Aeronautics Limited (HAL) as a major development partner. The primary objective of the Programme is to design and develop a Naval variant of the Light Combat Aircraft (Tejas) to operate from an aircraft carrier with Ski-jump Take-off But Arrested Recovery (STOBAR) concept. The aircraft gets airborne over a 14 degree parabolic ski-jump with about 200m run and is recovered by aircraft Arrestor Hook trapping the carrier Arresting Gear Wire within short span of 90m.

The LCA Navy Mk1 aircraft was developed incorporating naval specific requirements such as Telescopic Landing Gear for High Sink Rate landing, Arrestor Hook System (AHS), Leading Edge Vortex Controller (LEVCON) to reduce the approach speed and improved fuselage design to cater for high loads for deck operations.

Towards generating critical flight test data few more detachments are planned at SBTF as well onboard INS VKD in the near future.

Various technical challenges of qualifying the structure/LRUs and technology/learning developed along this journey has continuously generated the knowledge base and “customer confidence”, which has paved the path for the development of next generation Twin Engine Deck based Fighter (TEDBF).

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