

Towards High Altitude, Weaponized Dhruv

The Advanced Light Helicopters (Dhruv) powered by Shakti engine and in the weaponised role during their maiden flights at HAL's Helicopter Division in Bangalore recently.

Specifically being developed to take care of the stringent military requirements of the Indian Army and the Indian Air Force (IAF), Government of India owned aeronautical major Hindustan Aeronautics Limited (HAL) recently demonstrated the weapon loaded armed version of Advanced Light Helicopter (ALH) Dhruv. While the weapons have been tested individually, they were undergoing testing after integration with Dhruv. The first weaponized Dhruv will be ready for delivery by mid-2009. HAL hopes to bag order for the delivery of 300 ALH Dhruv equipped with Shakti engine is also making serious efforts for its exports. *A report:*

On the sunny but windy of August 16, two versions of the multi role, indigenous ALH Dhruv, a star product (HAL), gave a stunning demonstration of their versatile capabilities for about 30-minutes at the helicopter division of HAL in Bangalore.

While one was weapon loaded armed version of Dhruv, the other was equipped with the high performance 1000 hp Shakti engine developed by HAL in association with the French outfit Turbomeca, a Safran group company. "Shakti's high power is claimed to enable a whopping 150 per

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cent increase in payload capability at high altitude and also help operate in harsh terrain", observed HAL Chairman, Ashok Baweja.

The currently operational fleet of Dhruv choppers are powered by 800 hp TM-333.2B2 Turbomeca engine. HAL sources made it clear that the weaponized version of Dhruv equipped with Shakti engine are meant for high altitude battlefield operations and can accomplish missions in day and night as well as under adverse weather conditions.

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delivery by mid-2009. It is being specifically developed to take care of the stringent military requirements of the Indian army and the IAF. While the weapons have been tested individually, they were undergoing testing after integration with Dhruv, quipped Baweja.

HAL Chief helicopter test pilot Wing Commander C.D.Upadhyaya said, as the August 16 flight was meant for demonstrating the capability of the Shakti engine, the Dhruv chopper flew at low speeds and carried out limited manoeuvres.

However, Upadhyaya stated that the certification flight tests of 5.5-tonne class Dhruv powered by Shakti engine would include further tests at HAL, Bangalore, sea level and high altitude tests, tests under cold/hot weather conditions and hostile desert environment.

HAL hopes to bag order for the delivery of 300 ALH Dhruv equipped with Shakti engine to the three wings of the Indian armed force. The development of Shakti was taken up in 2003.

As envisaged now, the weaponized version of Dhruv will carry "fire and forget" air to air missiles, 70 mm rockets that can be launched in both direct and indirect modes as well as 20 mm turret guns which can be slaved to electro optical system or helmet pointing system. The high point of the weaponised Dhruv will be the anti tank guided Nag missile now being developed by the Defence Research and Development Organisation (DRDO).

This Dhruv version offers pilot information at his fingertips, besides decreasing workload and increasing man-machine interface.

According to HAL sources, the rotor blade problem, which had led to the grounding of Dhruv fleet a couple of years back, has been solved.

Similarly, referring to the earlier reports about the dissatisfaction expressed by the Indian armed forces over the serviceability and spares supply, Baweja said these problems were a thing of the past. HAL has delivered 67 of the 75 firm military orders so far .

According to Baweja, the demand for Dhruv in the domestic market is estimated to be around 300 carrying an average price tag of Rs. 3500-million.

Meanwhile, HAL is optimistic about securing an order for the supply of 12-air ambulance version of ALH to the Indian armed forces. These air ambulances have been planned for

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the use of medical services including casualty evacuation. Incidentally, HAL has equipped all the Dhruv that were produced during 2006-07 with glass cockpit, switching from the multi dialed conventional instrumentation system to one that has just four MFDs (Multi Function Displays).

HAL is also making serious efforts to sell ALH Dhruv to countries including Chile, Bolivia and Turkey and in the context of the fast picking up medical tourism market in South East Asia and is hopeful to find a good number of buyers for the ALH air ambulance in the South East Asian countries.

Built to FAR 29 specifications, ALH Dhruv entered limited series production in 2000. The fleet of the IAF display team Sarang includes Dhruv choppers. The helicopter has a twin-engine configuration, allowing continued flight virtually all through the flight envelope. The advanced technologies featured by Dhruv include automatic flight control, anti resonance vibration isolation system, full authority digital electronics control, hingless main rotor and bearingless tail rotor. ●

- Radhakrishna Rao

Dhruv Helicopter Set To Fly In Siachen



The indigenously developed Dhruv helicopter is set to be inducted by the army in the Siachen sector after successfully completing trials at the icy heights.

After its formal induction, the first advanced light helicopter would join the MI-17V, Chetak, Cheeta and Chetan helicopters, which fly daily in Siachen skies for over 35 hours in a month for logistic, communication, casualty evacuation and supply support.

According to the sources, Dhruv qualified for high-altitude glacier flying with flying colours on February 15. The helicopter would prove as an air taxi with support system for all weathers to the Indian soldiers.

The helicopter has cleared its validation processes, including test for high altitude and low temperature flying, which makes it ready to hover above the Siachen, sources said.

"Dhruv passed this test trials in August and it is now fit for flying in the Siachen sector in all conditions and conduct all types of operations," a defence source said.

Manufactured by Hindustan Aeronautics Limited (HAL), Bangalore and inducted into the Indian Air Force in 1998, Dhruv as "a multi-role chopper proved best on all the fronts in terms of operations relating to search and rescue, emergency airlift, air ambulance, evacuation, payload deliveries in high altitude posts and carriage of men and material", sources said. ●