CENTRE FOR AIR POWER STUDIES

REMINISCENCES OF IAF FROM THE PAST

02/2024

09 October 2024

Indigenous Light Combat Helicopter in Role of Drone Destroyer

Mr Atul Chandra
Research Scholar, Unni Kartha Chair of Excellence

Source: https://www.ndtv.com/india-news/newly-inducted-light-combat-helicopter-prachand-to-be-part-of-indian-air-force-day-3403309

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]

This work is licensed under Creative Commons Attribution – Non-Commercial – No Derivatives 4.0 International License.

Keywords: Drones, C-UAS, Anti-Drone Systems, LCH

The use of Armed Drones and Remotely Piloted Vehicles (RPV) in the ongoing conflicts in the Ukraine and the Middle-East have had a transformational effect on the battlefield, often overcoming traditional Anti-Aircraft Defences and Surface-to-Air Missile (SAM) systems. Any future conflict is likely to witness extensive use of Armed Drones and RPVs and there is an urgent need for developing innovative defences against such threats.

Innovative Drone Defence

Israel, already a close defence partner of India, has been undertaking counter-drone operations using its AH-64 attack helicopters for quite some time now. However, on October 1st, the U.S. Army's Central Command announced that one of its AH-64 attack helicopters carrying an upgraded AGM-114 Hellfire missile, successfully engaged an Unmanned Aerial System (UAS) during the Red Sands training exercise held in the Kingdom of Saudi Arabia. The successful use of an attack helicopter using a guided missile to engage a drone threat, marks an important milestone in efforts to develop an effective counter drone weapon system.

The Indian Air Force (IAF) which already operates AH-64 attack helicopters and AGM-114 Hellfire missiles must quickly look to developing a secondary Counter Unmanned Aerial System (C-UAS) capability with its fleet of attack helicopters. At present, the IAF operates 22 Apache attack helicopters, acquired under a deal worth approximately Rs13,950 crore signed in September 2015. While the IAF's Apache's are obviously a contender for undertaking Anti-drone defence duties, they may be better utilised in helping develop tactics for such tasks within the wider Air Force.

Indigenous Contender

In the Indian context, the IAF already has an excellent platform for such a future Anti-drone role, in the indigenously developed Light Combat Helicopter (LCH), which is now in production with Hindustan Aeronautics Limited (HAL). The LCH, which has been named 'Prachand' was inducted into service in October 2022 with the newly raised 143 Helicopter Unit, at Air Force Station Jodhpur. The LCH was developed with significant input and participation from the Air Force, which demanded manoeuvrability, agility, lethality, and speed, coupled battlefield survivability and crashworthiness being the other key attributes.

The LCH could potentially fill an important void within the Indian Armed Forces with regards to engaging adversary Unmanned Aerial Vehicles (UAV). While the LCH has been inducted into service, primarily as an attack helicopter to engage armoured targets and support the army's motorized infantry and armoured columns; it can have a more than useful secondary role Countering the drone threats on

the battlefield. This is especially the case, when there is a Need to develop and induct counter-drone systems to counter against drones which are either armed or undertaking battlefield reconnaissance/undertaking artillery spotting.

The advanced fighter jets operated by the Air Force are often flying at too high a speed to intercept UAVs, while the utility helicopters presently in service are too slow. The Air Force operates armed versions of the Dhruv utility helicopter (MkIV 'Rudra' Weapon System Integrated) and Mi-171V/V5 but these are considered unsuitable for Anti-drone roles due to their lack of manoeuvrability and climb performance. The LCH is also more survivable in contested environments and also features a Radar Cross Section (RCS), that is 1/3rd that of the Dhruv helicopter. The LCH is also equipped with a Laser Warning Receiver (LWR), Radar Warning Receiver (RWR) and a Missile Warning Receiver (MWR). It also has extensive armour protection for its pilots against small arms fire.

Designed to Attack

According to Wg Cdr (retd) Unni Pillai, HAL's former Chief Test Pilot (Rotary Wing), "the LCH exactly fills this slot with its speed and mix of guns and missiles." Another important attribute of the LCH, Unni says is its speed and rate of climb. The LCH can fly at a speed of up to 280 kmph and climb to 20,000 feet in only 6.5 minutes during summer in Leh (depending on how it is configured). The LCH's excellent manoeuvrability also makes it well suited to undertaking anti-drone defence roles.

The tandem-seat LCH is the only attack helicopter in its class with the ability to carry its full weapon load till 14,000 feet and land and take-off from altitudes of 15,000 feet. The LCH will especially be useful for Anti-drone duties at high-altitudes with its proven ability to perform in 'Hot and High' conditions at places like Leh, where the temperatures can be as high as 30-34 degrees centigrade during summers.

The LCH has been designed to tackle airborne threats and is armed with MBDA's Mistral Air to Air Missile (ATAM). These missiles are carried on the on two 'twin launchers', one on either side of the LCH; allowing it to carry four Infra-Red (IR) guided, high speed, fire-and-forget Mistral ATAMs. The Mistral ATAMs have a large off-boresight capability, together with the ability to aim the missile seeker very precisely at a given target. It attains a shaped trajectory in order to intercept targets top-down or at long range and the crew can also select the proximity fuze mode.

The LCH is also fitted with a chin-mounted 20mm cannon, which is slaved to the pilot's Helmet Mounted Display & Sight (HMDS). The Nexter Systems THL20 chin-mounted turret is fitted with Nexter's 20 mm M621 cannon, which has an average rate of fire of 750-800 rounds per minute and an effective range of up to 2,000 m. The LCH can also carry four 2.75-inch (70-mm) 12-tube rocket launchers with unguided rockets.

Worthy of Consideration

The LCH is heavily armed and highly manoeuvrable. It is already in service and can easily be customized to meet the Air Force's anti-drone needs. Being an indigenously designed and developed helicopter by HAL, the integration of new sensors and weapons for any future anti-drone defence role for the LCH, can be quickly and cost-effectively achieved by HAL supported by India's growing defence industry ecosystem.